

=> file reg  
FILE 'REGISTRY'  
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=> d his

FILE 'HCAPLUS'  
L1 25917 S TAKEDA ?/AU OR TAKANOBU ?/AU  
L2 88783 S WATANABE ?/AU OR OSAMU ?/AU  
L3 989 S HIRAHARA ?/AU OR KAZUHIRO ?/AU  
L4 5632 S TAKEMURA ?/AU OR KATSUYA ?/AU  
L5 207 S KUSAKI ?/AU OR WATARU ?/AU  
L6 12138 S SEKI ?/AU OR AKIHIRO ?/AU  
L7 1 S L1 AND L2 AND L3 AND L4 AND L5 AND L6  
SEL L7 1 RN

FILE 'REGISTRY'  
L8 5 S E1-E5  
L9 5 S L8 AND PMS/CI  
SEL L9 1,3,4 RN  
L10 3 S E6-E8

FILE 'HCAPLUS'  
L11 4 S L10

FILE 'LREGISTRY'  
L12 STR  
L13 STR  
L14 STR

FILE 'REGISTRY'  
L15 SCR 2043  
L16 22 S L12 AND L13 AND L15  
L17 4919 S L12 AND L13 AND L15 FUL  
SAV L17 LEE512/A

FILE 'LREGISTRY'  
L18 STR

FILE 'REGISTRY'  
L19 50 S L12 AND L18 AND L15 SSS SAM SUB=L17

FILE 'LREGISTRY'  
L20 STR L18

FILE 'REGISTRY'  
L21 6 S L12 AND L20 AND L15 SSS SAM SUB=L17  
L22 62 S L12 AND L20 AND L15 SSS FUL SUB=L17  
SAV L22 LEE512A/A

L23 1168 S L17 NOT 3<NC  
L24 47 S L23 AND L22

FILE 'HCAPLUS'  
L25 40 S L24

FILE 'REGISTRY'  
L26 16 S L22 AND 2/NC

FILE 'HCAPLUS'  
L27 42 S L22  
L28 30 S L26  
L29 144413 S PHOTORESIST? OR RESIST OR RESISTS OR PHOTOMASK? OR MASK  
L30 40 S (L25 OR L27 OR L28) AND L29  
L31 29 S L28 AND L29  
L32 39 S L25 AND L29  
L33 40 S L27 AND L29  
L34 26 S L31 NOT L11  
L35 10 S (L32 OR L33) NOT (L11 OR L34)  
L36 15 S L34 AND 1907-2000/PY  
L37 19 S L34 AND 1907-2001/PY  
L38 6 S L35 AND 1907-2001/PY

FILE 'REGISTRY'  
L39 0 S L12 AND L14 SSS SAM SUB=L17  
L40 1 S L12 AND L14 SSS FUL SUB=L17  
SAV L40 LEE512B/A

FILE 'CAOLD'  
L41 0 S L40

FILE 'ZCAPLUS'  
L42 1 S L40

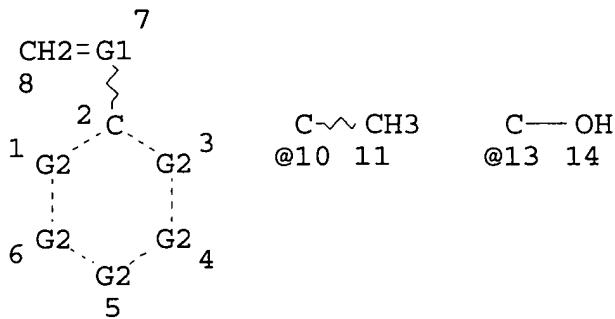
FILE 'REGISTRY'  
L43 STR  
L44 0 S L12 AND L43 SSS SAM SUB=L17  
L45 2 S L12 AND L43 SSS FUL SUB=L17  
SAV L45 LEE512B/A

FILE 'CAOLD'  
L46 0 S L45

FILE 'ZCAPLUS'  
L47 2 S L45

FILE 'REGISTRY'

=> d l45 que stat  
L12 STR



VAR G1=CH/10

VAR G2=CH/13

## NODE ATTRIBUTES:

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

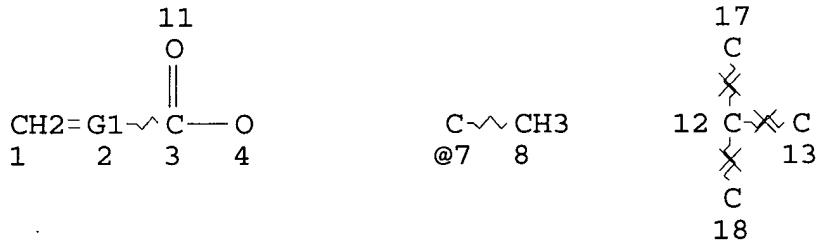
## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 12

## STEREO ATTRIBUTES: NONE

L13 STR



VAR G1=CH/7

## NODE ATTRIBUTES:

CONNECT IS E2 RC AT 4

CONNECT IS E4 RC AT 12

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

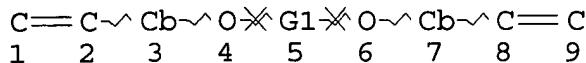
NUMBER OF NODES IS 11

## STEREO ATTRIBUTES: NONE

L15 SCR 2043

L17 4919 SEA FILE=REGISTRY SSS FUL L12 AND L13 AND L15

L43 STR



A @12

REP G1=(1-10) 12

## NODE ATTRIBUTES:

NSPEC IS RC AT 12

DEFAULT MLEVEL IS ATOM

GGCAT IS UNS AT 3

GGCAT IS UNS AT 7

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 10

## STEREO ATTRIBUTES: NONE

L45 2 SEA FILE=REGISTRY SUB=L17 SSS FUL L12 AND L43

100.0% PROCESSED 2485 ITERATIONS

2 ANSWERS

SEARCH TIME: 00.00.02

=&gt; file zcaplus

FILE 'ZCAPPLUS'

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=&gt; d 147 1-2 ibib abs hitstr hitrn

L47 ANSWER 1 OF 2 ZCAPPLUS COPYRIGHT 2002 ACS

ACCESSION NUMBER: 2002:253296 ZCAPPLUS

DOCUMENT NUMBER: 136:301776

TITLE: Chemical amplification positive working resist material

INVENTOR(S): Hatakeyama, Jun

PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 37 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.

KIND

DATE

APPLICATION NO.

DATE

-----  
JP 2002099090-----  
A2-----  
20020405-----  
JP 2001-210657-----  
20010711

US 2002042017

A1 20020411

US 2001-907653

(20010719)

PRIORITY APPLN. INFO.:

JP 2000-218490

A 20000719

AB The chem. amplification pos. working resist material used for electron beam and soft x-ray exposure comprises .gtoreq.1 hardly alk. sol. resin having .gtoreq.2 acid unstable group replacing H of a phenolic OH or carboxy group of an alk. sol. base polymer, wherein one of the acid unstable group is acetal or ketal group and the other is a tert hydrocarbon group. The chem. amplification pos. working resist material showed excellent stability in vacuum after the exposure.

IT 406909-43-1

(chem. amplification pos. working resist material)

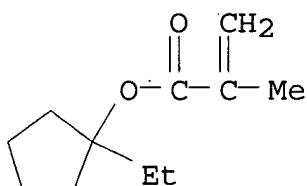
RN 406909-43-1 ZCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 1,1'-(1,4-butanediylbis(oxyethylideneoxy)]bis[4-ethenylbenzene] and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

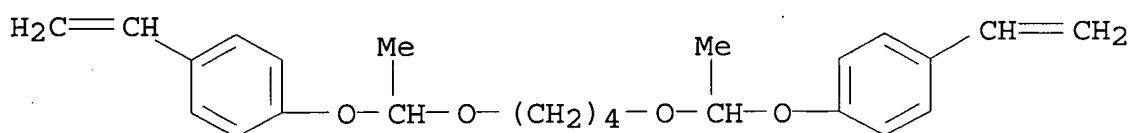
CMF C11 H18 O2



CM 2

CRN 215319-92-9

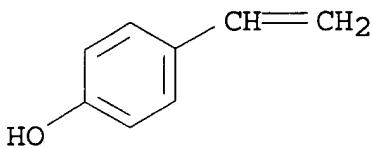
CMF C24 H30 O4



CM 3

CRN 2628-17-3

CMF C8 H8 O



IT 406909-43-1

(chem. amplification pos. working resist material)

L47 ANSWER 2 OF 2 ZCPLUS COPYRIGHT 2002 ACS  
 ACCESSION NUMBER: 1986:130787 ZCPLUS  
 DOCUMENT NUMBER: 104:130787  
 TITLE: High-refractive index polymers for lenses  
 INVENTOR(S): Ueno, Shoji; Ninomiya, Takao  
 PATENT ASSIGNEE(S): Sumitomo Chemical Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 60179406	A2	19850913	JP 1984-34945	19840224

AB Title polymers of excellent transparency, which can be cut without cracking, are composed of (co)polymers of 10-100% (CH<sub>2</sub>:CMeC<sub>6</sub>H<sub>4</sub>O)<sub>2</sub>Z (Z = CO, SO, COZ<sub>1</sub>CO, SO<sub>2</sub>Z<sub>1</sub>SO<sub>2</sub>; Z<sub>1</sub> = C<sub>1</sub>-18 hydrocarbon, optionally contg. O) and 0-90% monomers, whose n as homopolymers is  $\geq 1.5$ . Thus, 50 parts (m-CH<sub>2</sub>:CMeC<sub>6</sub>H<sub>4</sub>O)<sub>2</sub>CO and 50 parts styrene were copolymerd. in a mold at 30-80.degree. in presence of 1.0 part di-iso-Pr peroxydicarbonate and then polymerd. at 100.degree.. The copolymer had n 1.61, transmittance 90%, and could be cut without cracking vs. 1.59, 89%, and cracking, resp., for polystyrene.

IT 101181-17-3P  
 (prepn. of crack-resistant, for lenses)

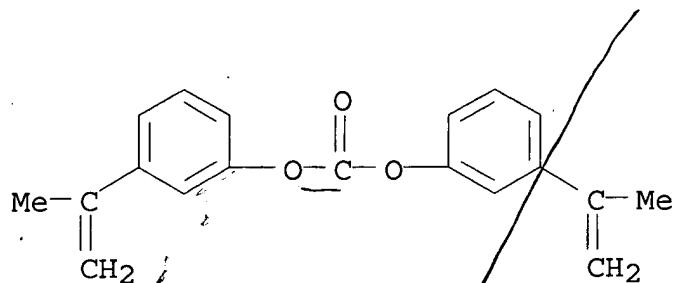
RN 101181-17-3 ZCPLUS

CN 2-Propenoic acid, 2-methyl-, (1-methylethylidene)bis[(2,6-dibromo-4,1-phenylene)oxy-2,1-ethanediyl] ester, polymer with bis[3-(1-methylethenyl)phenyl] carbonate and ethenylbenzene (9CI)  
 (CA INDEX NAME)

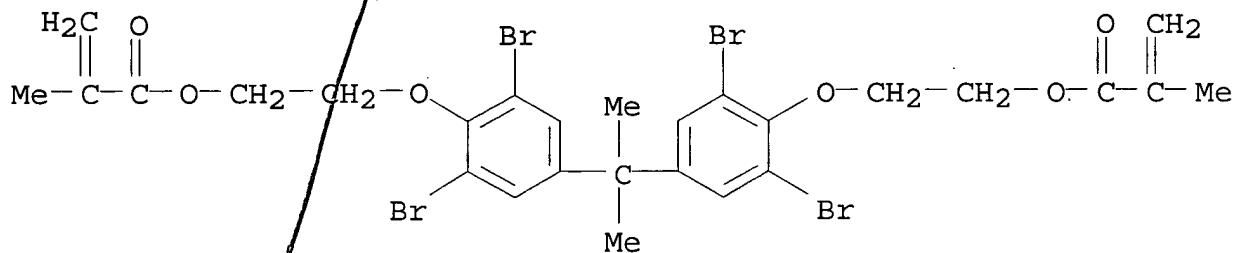
CM 1

CRN 101128-62-5

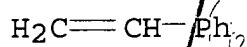
CMF C19 H18 O3



CM 2

CRN 67006-39-7  
CMF C27 H28 Br4 O6

CM 3

CRN 100-42-5  
CMF C8 H8IT 101181-17-3P  
(prepn. of crack-resistant, for lenses)

=> file reg  
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L2 88783 S WATANABE ?/AU OR OSAMU ?/AU  
L3 989 S HIRAHARA ?/AU OR KAZUHIRO ?/AU  
L4 5632 S TAKEMURA ?/AU OR KATSUYA ?/AU  
L5 207 S KUSAKI ?/AU OR WATARU ?/AU  
L6 12138 S SEKI ?/AU OR AKIHIRO ?/AU  
L7 1 S L1 AND L2 AND L3 AND L4 AND L5 AND L6  
SEL L7 1 RN

FILE 'REGISTRY'  
L8 5 S E1-E5  
L9 5 S L8 AND PMS/CI  
SEL L9 1,3,4 RN  
L10 3 S E6-E8

FILE 'HCAPLUS'  
L11 4 S L10

FILE 'LREGISTRY'  
L12 STR  
L13 STR  
L14 STR

FILE 'REGISTRY'  
L15 SCR 2043  
L16 22 S L12 AND L13 AND L15  
L17 4919 S L12 AND L13 AND L15 FUL  
SAV L17 LEE512/A

FILE 'LREGISTRY'  
L18 STR

FILE 'REGISTRY'  
L19 50 S L12 AND L18 AND L15 SSS SAM SUB=L17

FILE 'LREGISTRY'  
L20 STR L18

FILE 'REGISTRY'  
L21 6 S L12 AND L20 AND L15 SSS SAM SUB=L17  
L22 62 S L12 AND L20 AND L15 SSS FUL SUB=L17

SAV L22 LEE512A/A  
L23 1168 S L17 NOT 3<NC  
L24 47 S L23 AND L22

FILE 'HCAPLUS'  
L25 40 S L24

FILE 'REGISTRY'  
L26 16 S L22 AND 2/NC

FILE 'HCAPLUS'  
L27 42 S L22  
L28 30 S L26  
L29 144413 S PHOTORESIST? OR RESIST OR RESISTS OR PHOTOMASK? OR MASK  
L30 40 S (L25 OR L27 OR L28) AND L29  
L31 29 S L28 AND L29  
L32 39 S L25 AND L29  
L33 40 S L27 AND L29  
L34 26 S L31 NOT L11  
L35 10 S (L32 OR L33) NOT (L11 OR L34)  
L36 15 S L34 AND 1907-2000/PY  
L37 19 S L34 AND 1907-2001/PY  
L38 6 S L35 AND 1907-2001/PY

FILE 'REGISTRY'  
L39 0 S L12 AND L14 SSS SAM SUB=L17  
L40 1 S L12 AND L14 SSS FUL SUB=L17  
SAV L40 LEE512B/A

FILE 'CAOLD'  
L41 0 S L40

FILE 'ZCAPLUS'  
L42 1 S L40

FILE 'REGISTRY'  
L43 STR  
L44 0 S L12 AND L43 SSS SAM SUB=L17  
L45 2 S L12 AND L43 SSS FUL SUB=L17  
SAV L45 LEE512B/A

FILE 'CAOLD'  
L46 0 S L45

FILE 'ZCAPLUS'  
L47 2 S L45

FILE 'LREGISTRY'  
L48 STR

## FILE 'REGISTRY'

L49        50 S L12 AND L48 AND L13 SSS SAM SUB=L17  
L50        STR L13  
L51        7 S L12 AND L48 AND L50 SSS SAM SUB=L17  
L52        STR L48  
L53        1 S L12 AND L52 AND L50 SSS SAM SUB=L17  
L54        STR L52  
L55        0 S L12 AND L54 AND L50 SSS SAM SUB=L17  
L56        36 S L12 AND L54 AND L50 SSS FUL SUB=L17  
            SAV L56 LEE512C/A  
L57        11 S L56 AND L23  
L58        1152 S L23 NOT L26

## FILE 'HCAPLUS'

L59        5 S L57  
L60        22 S L56  
L61        1783 S L58  
L62        4 S L59 AND L29  
L63        5 S L60 AND L29  
L64        283 S L61 AND L29  
L65        5 S L62 OR L63  
L66        167 S L64 AND 1907-2000/PY  
L67        123 S L66 AND P/DT

## FILE 'REGISTRY'

L68        2461 S 585-07-9/CRN  
L69        4263 S L17 NOT L68  
L70        753 S L69 AND 3/NC

## FILE 'HCAPLUS'

L71        3 S L65 AND 1907-2001/PY  
L72        805 S L70  
L73        158 S L72 AND L29  
L74        74 S L73 AND 1907-2000/PY  
L75        70 S L74 AND P/DT  
L76        69 S L75 NOT L71

## FILE 'REGISTRY'

L77        1537 S 1663-39-4/CRN  
L78        3918 S L69 NOT L77  
L79        669 S L78 AND 3/NC

## FILE 'HCAPLUS'

L80        653 S L79  
L81        73 S L80 AND L29  
L82        31 S L81 AND 1907-2000/PY  
L83        31 S L82 AND P/DT  
            SEL L83 1-31 HIT RN

## FILE 'REGISTRY'

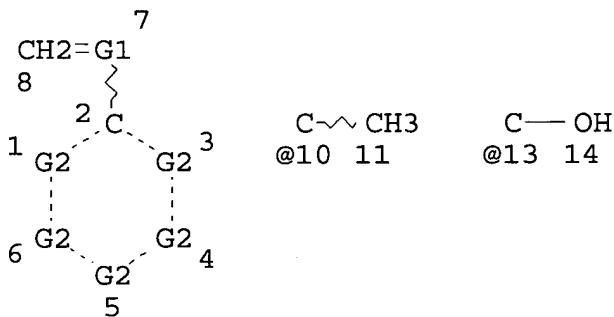
L84        57 S E9-E67  
L85        50 S L84 AND 3/ELC.SUB

L86            SEL L85 7,19,22,23,42 RN  
 5 S E68-E72

FILE 'HCAPLUS'  
 L87            3 S L86  
 L88            3 S L87 AND L29  
 L89            6 S L71 OR L88  
 L90            6 S L89 AND 1907-2001/PY

FILE 'REGISTRY'

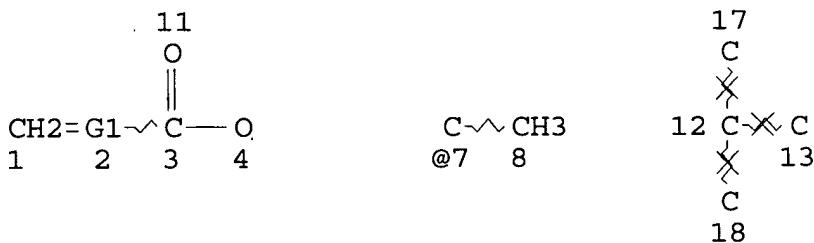
=> d 156 que stat  
 L12            STR



VAR G1=CH/10  
 VAR G2=CH/13  
 NODE ATTRIBUTES:  
 DEFAULT MLEVEL IS ATOM  
 DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
 RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE  
 L13            STR



VAR G1=CH/7  
 NODE ATTRIBUTES:  
 CONNECT IS E2 RC AT 4  
 CONNECT IS E4 RC AT 12  
 DEFAULT MLEVEL IS ATOM

Lee 09/800,512 (81482)

Page 5

DEFAULT ECLEVEL IS LIMITED

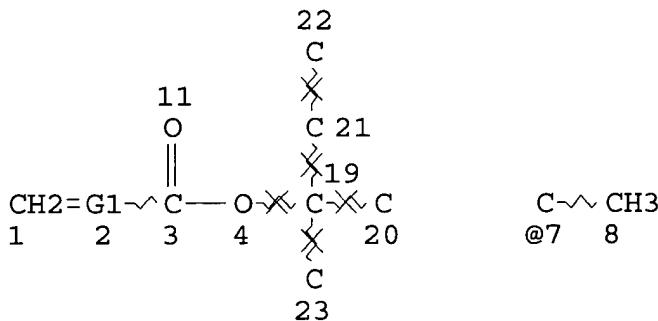
## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

L15 SCR 2043

L17 4919 SEA FILE=REGISTRY SSS FUL L12 AND L13 AND L15  
L50 STR



VAR G1=CH/7

## NODE ATTRIBUTES:

NSPEC IS RC AT 19

NSPEC IS RC AT 20

NSPEC IS RC AT 21

NSPEC IS RC AT 22

NSPEC IS RC AT

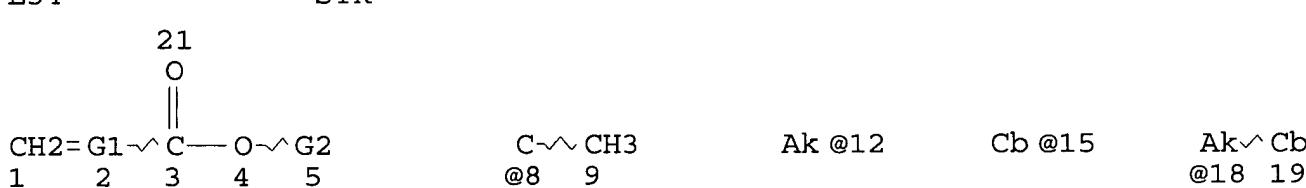
CONNECT IS E2 RC AT 4

CONNECT TO ZZ  
DEFAULT MLEVEL

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED ON

## STEREO ATTRIBUTES: I



VAR G1=CH/8

VAR G2=12/15/18

## NODE ATTRIBUTES:

CONNECT IS E1 RC AT 12

CONNECT IS E1 RC AT 15

CONNECT IS E1 RC HI 15  
CONNECT IS E2 RC AT 18

CONNECT IS E1 RC AT 19  
 DEFAULT MLEVEL IS ATOM  
 GGCAT IS LIN SAT AT 12  
 GGCAT IS MCY SAT AT 15  
 GGCAT IS LIN SAT AT 18  
 GGCAT IS SAT AT 19  
 DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 12

## STEREO ATTRIBUTES: NONE

L56 36 SEA FILE=REGISTRY SUB=L17 SSS FUL L12 AND L54 AND L50

100.0% PROCESSED 1611 ITERATIONS

36 ANSWERS

SEARCH TIME: 00.00.03

=> file hcaplus  
 FILE 'HCAPLUS'

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=> d 190 1-6 cbib abs hitstr hitind

L90 ANSWER 1 OF 6 HCAPLUS COPYRIGHT 2002 ACS

2001:738604 Document No. 135:310914 Positive-working

radiation-sensitive **resist** resin composition for  
 electroplating in electric parts fabrication and method for  
 electroplating using same. Ota, Masaru; Ito, Atsushi; Iwanaga,  
 Shinichiro (JSR Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001281862  
 A2 200101010, 14 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 2000-90783 20000329.

AB The the title pos.-working radiation-sensitive **resist**  
 resin compn. contains a polymer generating acidic groups by reacting  
 with an acid and a radiation-sensitive acid-generating compd. The  
 compn., which contains the polymer having groups generating acidic  
 groups and the acid generating compd., forms thick precisely  
 patterned plating layers and is suitable for manufg. elec. parts  
 such as bumps on elec. component to be mounted on LSI substrate and  
 for forming wirings on a substrate.

IT 366464-23-5P 366464-24-6P 366464-25-7P  
 366464-28-0P

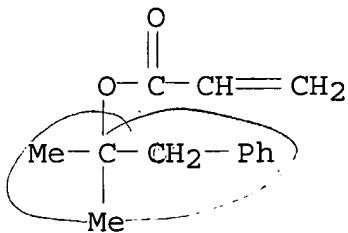
(polymer in pos.-working radiation sensitive **resist**  
 resin compn.)

RN 366464-23-5 HCAPLUS

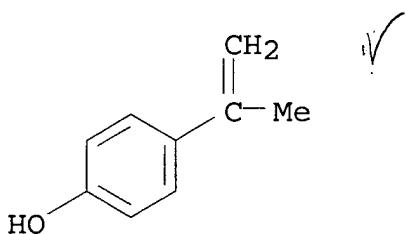
CN 2-Propenoic acid, 1,1-dimethyl-2-phenylethyl ester, polymer with  
 4-(1-methylethenyl)phenol and methyl 2-propenoate (9CI) (CA INDEX

NAME)

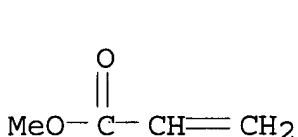
CM 1

CRN 324767-19-3  
CMF C13 H16 O2

CM 2

CRN 4286-23-1  
CMF C9 H10 O

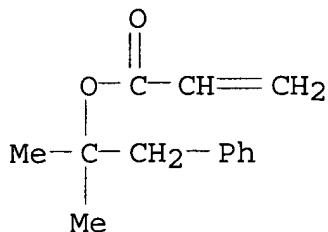
CM 3

CRN 96-33-3  
CMF C4 H6 O2

RN 366464-24-6 HCPLUS  
 CN 2-Propenoic acid, 1,1-dimethyl-2-phenylethyl ester, polymer with ethyl 2-propenoate and 4-(1-methylethenyl)phenol (9CI) (CA INDEX NAME)

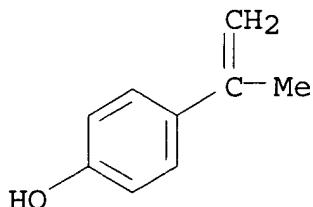
CM 1

CRN 324767-19-3  
 CMF C<sub>13</sub> H<sub>16</sub> O<sub>2</sub>



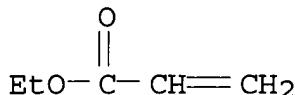
CM 2

CRN 4286-23-1  
 CMF C<sub>9</sub> H<sub>10</sub> O



CM 3

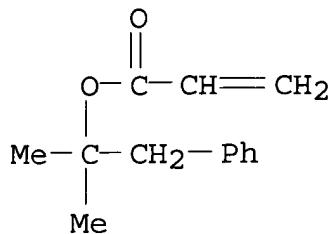
CRN 140-88-5  
 CMF C<sub>5</sub> H<sub>8</sub> O<sub>2</sub>



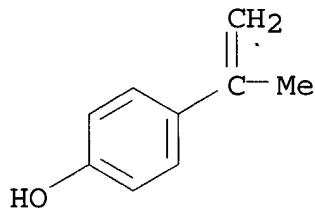
RN 366464-25-7 HCAPLUS  
 CN 2-Propenoic acid, 1,1-dimethyl-2-phenylethyl ester, polymer with ethyl 2-propenoate, 2-hydroxypropyl 2-propenoate and 4-(1-methylethenyl)phenol (9CI) (CA INDEX NAME)

CM 1

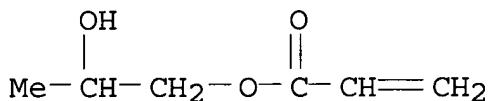
CRN 324767-19-3  
 CMF C<sub>13</sub> H<sub>16</sub> O<sub>2</sub>



CM 2

CRN 4286-23-1  
CMF C9 H10 O

CM 3

CRN 999-61-1  
CMF C6 H10 O3

CM 4

CRN 140-88-5  
CMF C5 H8 O2

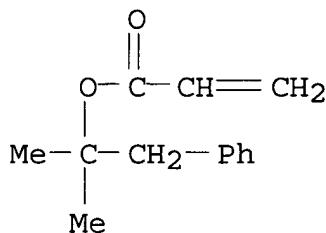
RN 366464-28-0 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethyl-2-phenylethyl ester, polymer with  
2-hydroxypropyl 2-propenoate, 4-(1-methylethethyl)phenol and methyl

2-propenoate (9CI) (CA INDEX NAME)

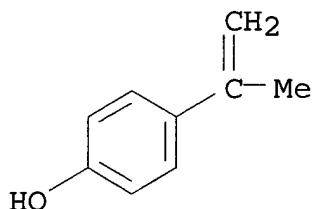
CM 1

CRN 324767-19-3  
CMF C13 H16 O2



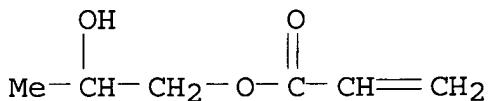
CM 2

CRN 4286-23-1  
CMF C9 H10 O



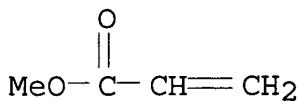
CM 3

CRN 999-61-1  
CMF C6 H10 O3



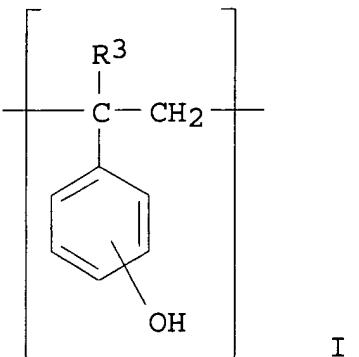
CM 4

CRN 96-33-3  
CMF C4 H6 O2



IC ICM G03F007-039  
 ICS C08J005-18; C08L033-08; C08L033-10; C08L101-02; C25D005-02;  
 C25D007-12; G03F007-004; G03F007-11; G03F007-38; G03F007-40;  
 G03F007-42  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 56, 72, 76  
 ST pos working radiation sensitive **resist** resin compn  
 electroplating elec; circuit working radiation sensitive  
**resist** resin compn electroplating elec  
 IT Coating process  
 (plating; pos.-working radiation sensitive **resist** resin  
 compn. for electroplating used in elec. circuit formation and  
 method for electroplating using same)  
 IT **Resists**  
 Semiconductor device fabrication  
 (pos.-working radiation sensitive **resist** resin compn.  
 for electroplating used in elec. circuit formation and method for  
 electroplating using same)  
 IT 366464-22-4P **366464-23-5P 366464-24-6P**  
**366464-25-7P** 366464-26-8P 366464-27-9P  
**366464-28-0P**  
 (polymer in pos.-working radiation sensitive **resist**  
 resin compn.)  
 IT 135668-77-8  
 (radiation-sensitive acid-generating compd. in pos.-working  
 radiation sensitive **resist** resin compn.)

L90 ANSWER 2 OF 6 HCPLUS COPYRIGHT 2002 ACS  
 2001:451196 Document No. 135:68548 Radiation-sensitive  
**chemically amplified resist** composition  
 containing specific copolymer. Nishimura, Yukio; Kobayashi, Eiichi;  
 Shiotani, Takeo; Shimokawa, Tsutomu (JSR Co., Ltd., Japan). Jpn.  
 Kokai Tokkyo Koho JP 2001166474 A2 **20010622** 18 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-344911 19991203.  
 GI



AB The title compn. contains a radiation-sensitive acid generator and a copolymer having repeating unit  $[-C(R1)(COOR2)-CH_2-]$  ( $R1 = H$ , methyl;  $R2 = C_{>10}$  alicyclic) and of repeating unit I ( $R3 = H$ , methyl) with  $\leq 50\%$  content. The compn., which contains the copolymer having the aforementioned repeating units, shows the decreased effect of the post exposure delay(PED) on the pattern profiles.

IT **345631-89-2P 345631-90-5P**

(radiation active chem. **amplified resist** compn. contg. specific copolymer)

RN 345631-89-2 HCPLUS

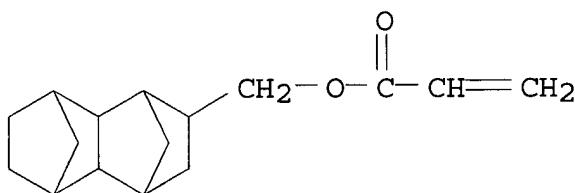
CN 2-Propenoic acid, 1,1,4,4-tetramethyl-1,4-butanediyl ester, polymer with [decahydro-6 (or 7)-hydroxy-1,4:5,8-dimethanonaphthalen-2-yl]methyl 2-propenoate, 1-(1,1-dimethylethoxy)-4-ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 345631-87-0

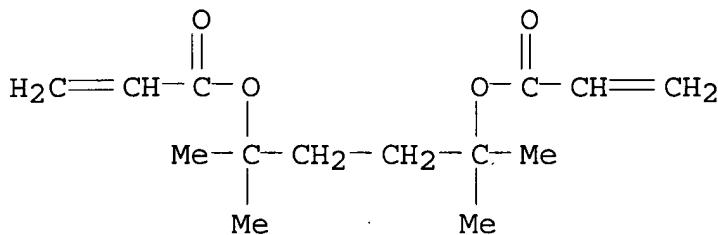
CMF C16 H22 O3

CCI IDS



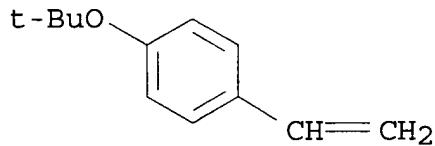
CM 2

CRN 188837-15-2  
 CMF C14 H22 O4



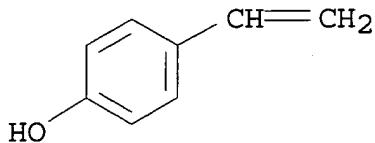
CM 3

CRN 95418-58-9  
 CMF C12 H16 O



CM 4

CRN 2628-17-3  
 CMF C8 H8 O

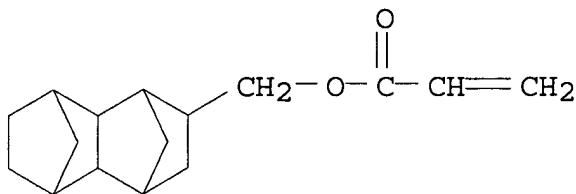


RN 345631-90-5 HCPLUS  
 CN 2-Propenoic acid, [decahydro-6(or 7)-hydroxy-1,4:5,8-dimethanonaphthalen-2-yl]methyl ester, polymer with 4-ethenylphenol and 2-methyltricyclo[3.3.1.13,7]dec-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

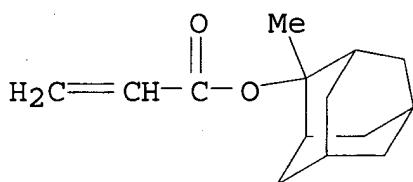
CRN 345631-87-0  
 CMF C16 H22 O3

CCI IDS

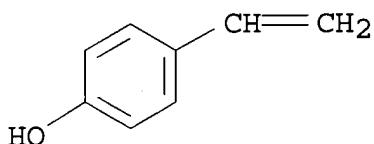


D1-OH

CM 2

CRN 249562-06-9  
CMF C14 H20 O2

CM 3

CRN 2628-17-3  
CMF C8 H8 O

IC ICM G03F007-038  
ICS C08L033-06; G03F007-004; H01L021-027; C08L025-18  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
ST radiation active amplified **resist** compn copolymer  
IT Light-sensitive materials  
**Photoresists**  
(radiation active chem. amplified)

IT resist compn. contg. specific copolymer)  
 200808-68-0P, 4-Hydroxystyrene-styrene-tert-butyl acrylate copolymer  
 345348-83-6P 345348-84-7P 345348-85-8P 345631-88-1P  
**345631-89-2P 345631-90-5P 345631-91-6P**  
 (radiation active chem. amplified  
 resist compn. contg. specific copolymer)

L90 ANSWER 3 OF 6 HCAPLUS COPYRIGHT 2002 ACS  
 2000:600540 Document No. 133:215450 Positive-working photosensitive  
 composition containing silicone. Sakaguchi, Shinji (Fuji Photo Film  
 Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000235264 A2  
20000829, 49 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
 JP 1999-143614 19990524. PRIORITY: JP 1998-354878 19981214.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to a pos.-working photosensitive compn.  
 contg.; (a) a water-insol. and alkali-sol. polymer having repeating  
 unit I or II( X = -C=O, H, hydrocarbon, etc.; R'----- = OH, alkyl,  
 cycloaralkyl, etc.; R0 = H, halo, hydrocarbon; r, s, t = 1-3  
 integer; u, v = 1, 2; l, m, n, q .gtoreq.0 integer; p>0 integer;  
 R.alpha.--.gamma. = single bond, -(CH2)k-(Z.alpha.)-R.delta.;  
 Z.alpha. = -CO-, -O-, -N(R.epsilon.)-; R.delta. = single bond,  
 C1-12 alkylene; arylene, aralkyl; R.epsilon. = H, C1-10 alkyl; k =  
 .gtoreq.0 integer; j = 0, 1); (b) a compd. generating an acid upon  
 irradn. of actinic or radioactive ray; and (c) an polymer, which  
 increases the solv. towards an alkali developer at the presence of  
 an acid, having repeating unit -(C(R1)(R2)-C(R3)(R4-(G)f))a-,  
 -(C(R5)(R6)-C(R7)(R8-(Q)g))b- (R1-3,5-7,9-11 = H, halo, alkyl, etc.);  
 R4,9 =single bond, 2-5 valent specific aryl, amide group) and  
 -(C(R9)(R10)-C(R11)(R12))c- and acid-sensitive group, and (d) a  
 nitrogen contg. cyclic compd. and/or an aliph. amine having a  
 carboxylic substituent. The compn. provides the high sensitivity  
 and the high resoln. and is suitable for use in a semiconductor  
 device prodn.

IT **289706-87-2**  
 (pos.-working photosensitive compn.)

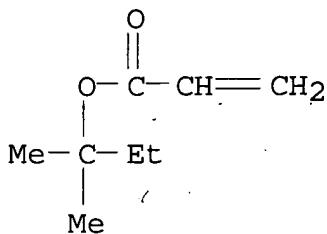
RN 289706-87-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, phenylmethyl ester, polymer with  
 1,1-dimethylpropyl 2-propenoate and 4-ethenylphenol (9CI) (CA INDEX  
 NAME)

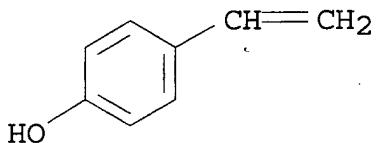
CM 1

CRN 7383-26-8

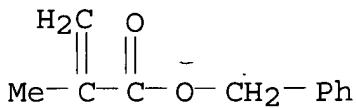
CMF C8 H14 O2



CM 2

CRN 2628-17-3  
CMF C8 H8 O

CM 3

CRN 2495-37-6  
CMF C11 H12 O2

IC ICM G03F007-075

ICS C08L083-06; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76IT **Photoresists**

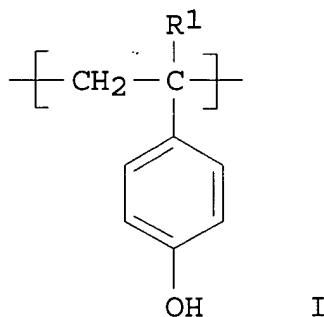
(pos.-working photosensitive compn. contg. silicone)

IT 109-12-6, 2-Aminopyrimidine 119-65-3, Isoquinoline 260-94-6,  
Acridine 504-29-0, 2-Aminopyridine 534-85-0,  
2-Aminodiphenylamine 580-20-1, 7-Hydroxyquinoline 607-31-8,  
4-Methoxyquinoline 611-64-3, 9-Methylacridine 620-08-6,  
4-Methoxypyridine 670-95-1, 4-Phenylimidazole 822-36-6,  
4-Methylimidazole 18123-20-1, 4-Hydroxyacridine 23687-25-4,  
4-Aminoisoquinoline 31401-45-3, 4-Dimethylaminopyrimidine  
36631-19-3, Triphenyl imidazole 177034-67-2 287925-54-6  
287925-56-8 288620-13-3 288620-15-5 289706-73-6 289706-75-8

289706-76-9    289706-79-2    289706-80-5    289706-81-6    289706-82-7  
 289706-83-8    289706-84-9    289706-85-0    289706-86-1  
**289706-87-2**    289706-88-3    289706-90-7  
 (pos.-working photosensitive compn.)

L90 ANSWER 4 OF 6 HCAPLUS COPYRIGHT 2002 ACS  
 2000:143365 Document No. 132:187654 Radiation-sensitive **resist**  
 composition. Kobayashi, Eiichi; Ikemura, Toshiaki; Nishimura,  
 Yukio; Iwanaga, Shinichiro (JSR Co., Ltd., Japan). Jpn. Kokai  
 Tokkyo Koho JP 2000066404 A2 **20000303**, 22 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 1998-258876 19980911. PRIORITY: JP  
 1998-164700 19980612.

GI



AB The radiation-sensitive **resist** compn. contains a radiation-sensitive acid generator and a resin of structure repeating unit I ( $R_1 = H$ , methyl) and  $(-\text{CH}_2-\text{C}(R_2)(-\text{COOC}(\text{CH}_3)(\text{CH}_3)-\text{CH}_2-\text{COCH}_3)-)$  ( $R_2 = \text{Me}$ ,  $H$ ). The **resist** compn. shows the excellent sensitivity towards far-UV light and provides the superior resln.

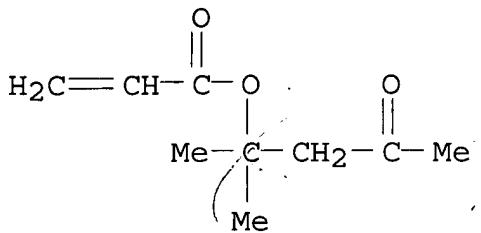
IT **259196-63-9P 259196-65-1P 259196-69-5DP**,  
 1-ethoxypropyl ether  
 (radiation-sensitive **resist** compn.)

RN 259196-63-9 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethyl-3-oxobutyl ester, polymer with 4-ethenylphenol and octahydro-4,7-methano-1H-inden-5-yl 2-propenoate (9CI) (CA INDEX NAME)

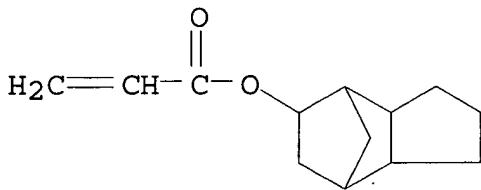
CM 1

CRN 155844-84-1  
 CMF C9 H14 O3



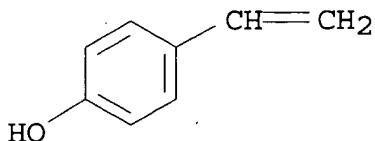
CM 2

CRN 7398-56-3  
CMF C13 H18 O2



CM 3

CRN 2628-17-3  
CMF C8 H8 O

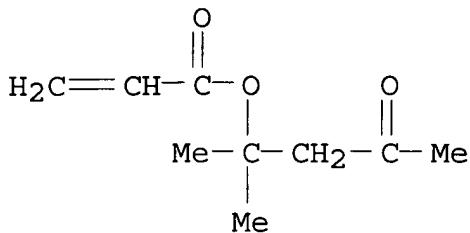


RN 259196-65-1 HCAPLUS

CN 2-Propenoic acid, 1,1-dimethyl-3-oxobutyl ester, polymer with  
4-(1-methylethenyl)phenol and rel-(1R,2R,4R)-1,7,7-  
trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

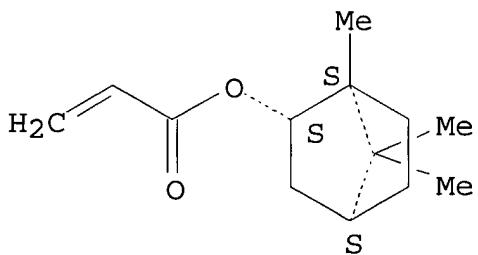
CRN 155844-84-1  
CMF C9 H14 O3



CM 2

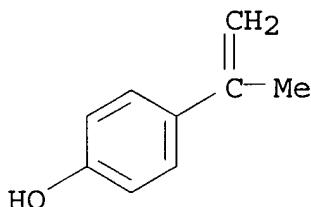
CRN 5888-33-5  
 CMF C13 H20 O2

Relative stereochemistry.



CM 3

CRN 4286-23-1  
 CMF C9 H10 O

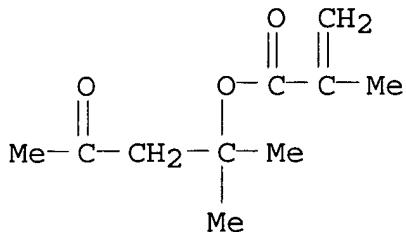


RN 259196-69-5 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1,1-dimethyl-3-oxobutyl ester, polymer with 4-ethenylphenol and (octahydro-4,7-methano-1H-indene-5,?-diyl)bis(methylene) di-2-propenoate (9CI) (CA INDEX NAME)

CM 1

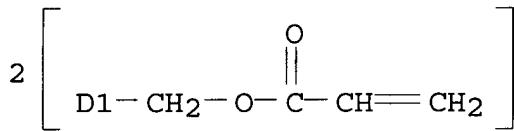
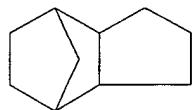
CRN 93940-09-1

CMF C10 H16 O3



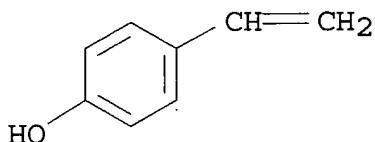
CM 2

CRN 42594-17-2  
 CMF C18 H24 O4  
 CCI IDS



CM 3

CRN 2628-17-3  
 CMF C8 H8 O



IC ICM G03F007-039  
 ICS H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 ST radiation sensitive **resist** compn far UV

IT **Resists**

(radiation-sensitive; radiation-sensitive **resist**  
comprn.)

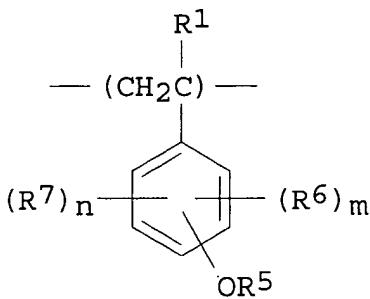
IT 133710-62-0 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane  
144317-44-2 185195-30-6, Bis(4-tert-butylphenyl)iodonium  
10-camphorsulfonate  
(acid generating agent of radiation-sensitive **resist**  
comprn.)

IT 24979-70-2DP, ethoxyalkyl ethers 24979-74-6DP,  
1-(cyclohexyloxy)ethyl ether 147625-42-1DP, 1-ethoxyethyl ether  
159296-87-4DP, 1-ethoxyethyl ether 259196-63-9P  
259196-64-0DP, 1-ethoxyethyl ether 259196-64-0P  
**259196-65-1P** 259196-66-2P 259196-67-3P 259196-68-4P  
**259196-69-5DP**, 1-ethoxypropyl ether 259196-69-5DP,  
1-ethoxypropyl ether 259214-34-1DP, 1-ethoxyethyl ether  
(radiation-sensitive **resist** comprn.)

L90 ANSWER 5 OF 6 HCPLUS COPYRIGHT 2002 ACS

1999:658546 Document No. 131:293308 Positively working  
**photoresist** composition containing acid-generating compound.  
Aogo, Toshiaki; Mizutani, Kazuyoshi; Tan, Shiro (Fuji Photo Film  
Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11282163 A2  
19991015 Heisei, 53 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1998-79458 19980326.

GI



AB The material contains a compd. generating acid under exposure to active lights or radioactive rays and a resin with repeating units I and  $[\text{CH}_2\text{C}(\text{R}1)\text{CO}_2\text{CR}_2\text{R}_3\text{R}4]$  [ $\text{R}1 = \text{H}, \text{Me}$ ;  $\text{R}2, \text{R}3 = \text{H}$ , (substituted) alkyl, (substituted) aryl;  $\text{R}4 = \text{cycloalkyl, alkenyl, alkynyl, aralkyl, aryl}$ , where they may be substituted;  $\text{R}5 = \text{H, CR}_8\text{R}_9\text{R}_{10, CR}_{11}\text{R}_{12}\text{OR}_{13}$ ;  $\text{R}8-12 = \text{H}$ , (substituted) alkyl, (substituted) cycloalkyl, (substituted) alkenyl, (substituted) alkynyl, (substituted) aryl;  $\text{R}13 = \text{alkyl, cycloalkyl, aryl}$ ;  $\text{R}6, \text{R}7 = \text{halo, OH, (substituted) alkyl, (substituted) aryl, (substituted) aralkyl, (substituted) alkoxy, (substituted) acyl, (substituted) acyloxy}$ ; two of each  $\text{R}2-4, \text{R}8-10$ , and  $\text{R}11-13$  may form a ring;  $m, n = 0-3$ ]. The material shows high sensitivity and improved resolving power and

improved pattern profile because of no change of pattern shapes and sensitivity under exposure.

IT 246157-34-6 246157-36-8 246157-38-0

246157-40-4 246157-45-9

(pos.-working **photoresist** contg. acrylic hydroxystyrene polymer and acid-generating agent with improved resolving power and pattern profile)

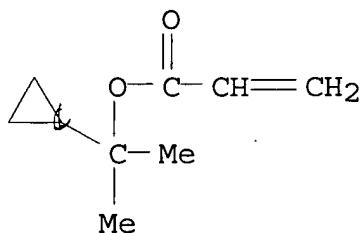
RN 246157-34-6 HCAPLUS

CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 246157-33-5

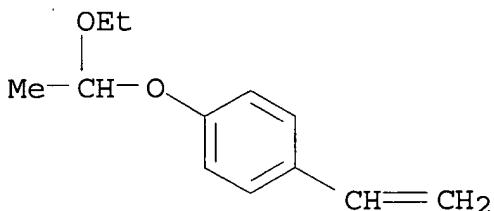
CMF C9 H14 O2



CM 2

CRN 157057-20-0

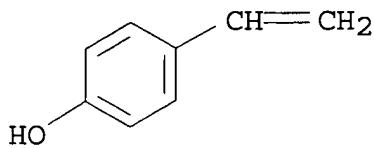
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



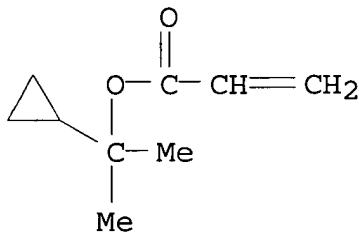
RN 246157-36-8 HCPLUS

CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with 1-ethenyl-4-[1-(2-methylpropoxy)ethoxy]benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 246157-33-5

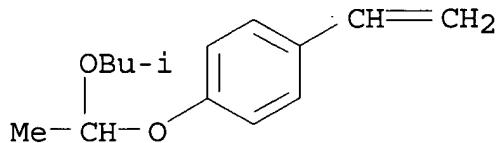
CMF C9 H14 O2



CM 2

CRN 192314-53-7

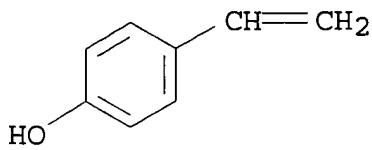
CMF C14 H20 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



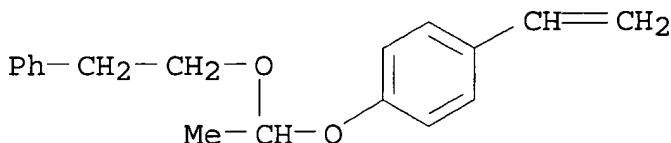
RN 246157-38-0 HCAPLUS

CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with 4-ethenylphenol and 1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

CM 1

CRN 246157-37-9

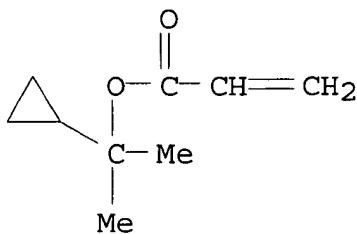
CMF C<sub>18</sub> H<sub>20</sub> O<sub>2</sub>



CM 2

CRN 246157-33-5

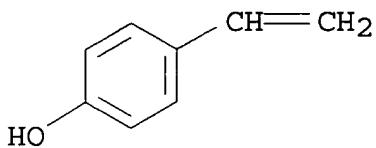
CMF C<sub>9</sub> H<sub>14</sub> O<sub>2</sub>



CM 3

CRN 2628-17-3

CMF C<sub>8</sub> H<sub>8</sub> O



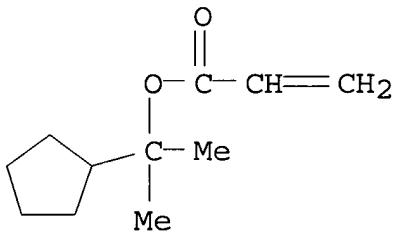
RN 246157-40-4 HCPLUS

CN 2-Propenoic acid, 1-cyclopentyl-1-methylethyl ester, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 246157-39-1

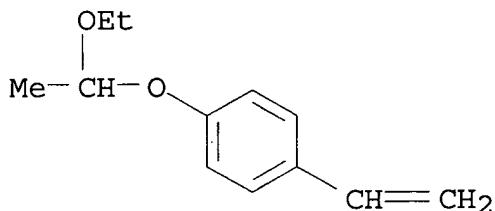
CMF C11 H18 O2



CM 2

CRN 157057-20-0

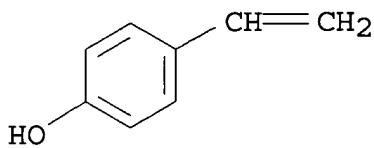
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



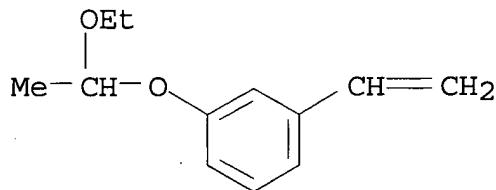
RN 246157-45-9 HCPLUS

CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with 1-ethenyl-3-(1-ethoxyethoxy)benzene and 3-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 246157-44-8

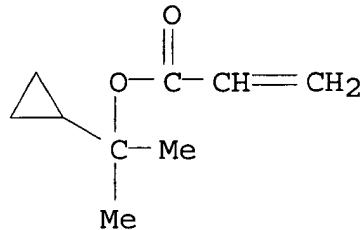
CMF C12 H16 O2



CM 2

CRN 246157-33-5

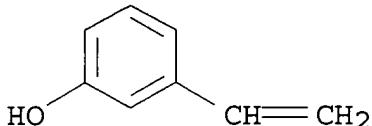
CMF C9 H14 O2



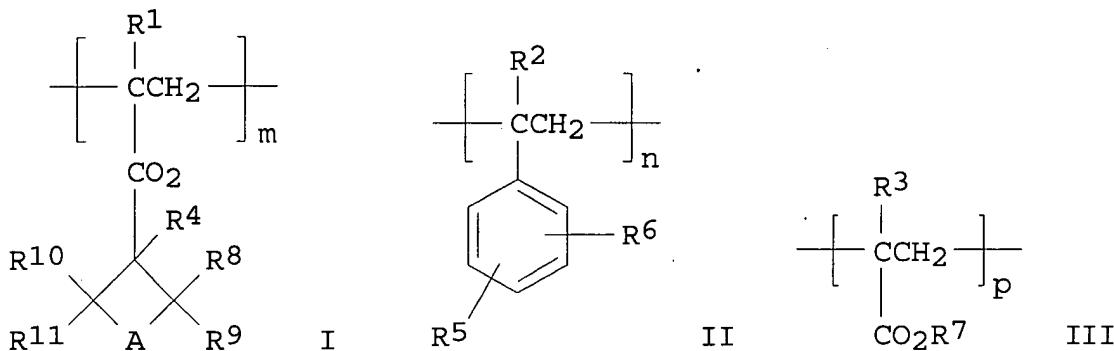
CM 3

CRN 620-18-8

CMF C8 H8 O



IC ICM G03F007-039  
 ICS C08F220-18; C08K005-00; C08L025-18; C08L031-02; C08L101-00;  
 H01L021-027; C08F212-14  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 38  
 ST pos working **photoresist** acrylic hydroxystyrene polymer;  
 acid generating agent pos working **photoresist**; resolving  
 power pattern profile **photoresist**  
 IT Positive **photoresists**  
 (pos.-working **photoresist** contg. acrylic hydroxystyrene  
 polymer and acid-generating agent with improved resolving power  
 and pattern profile)  
 IT 144317-44-2 194999-85-4 197447-16-8 207464-07-1 240424-20-8  
 240424-21-9  
 (acid-generating agent; pos.-working **photoresist** contg.  
 acrylic hydroxystyrene polymer and acid-generating agent with  
 improved resolving power and pattern profile)  
 IT 115-18-4  
 (monomer from; pos.-working **photoresist** contg. acrylic  
 hydroxystyrene polymer from)  
 IT 120880-88-8P  
 (monomer; pos.-working **photoresist** contg. acrylic  
 hydroxystyrene polymer from)  
 IT 109-92-2DP, Ethyl vinyl ether, reaction product with hydrolyzed  
 acetoxy styrene polymer 246157-32-4DP, hydrolyzed, reaction product  
 with Et vinyl ether  
 (pos.-working **photoresist** contg. acrylic hydroxystyrene  
 polymer and acid-generating agent with improved resolving power  
 and pattern profile)  
 IT 246157-34-6 246157-36-8 246157-38-0  
 246157-40-4 246157-41-5 246157-43-7 246157-45-9  
 246157-46-0  
 (pos.-working **photoresist** contg. acrylic hydroxystyrene  
 polymer and acid-generating agent with improved resolving power  
 and pattern profile)  
 L90 ANSWER 6 OF 6 HC APIUS COPYRIGHT 2002 ACS  
 1996:443720 Document No. 125:100187 Radiation-sensitive **resist**  
 composition. Matsuno, Shugo; Abe, Nobunori; Wada, Yasumasa (Nippon  
 Zeon Co, Japan). Jpn. Kokai Tokkyo Koho JP 08101509 A2  
 19960416 Heisei, 0 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1994-261054 19940930.



AB The title **resist** compn. contains a radiation-sensitive component which generates an acid by irradn. with activated radiation and a polymer having structural units I, II, and III [R1-3 = H, C1-4 (substituted) alkyl, halo, cyano, nitro; R4 = linear, branched, or cyclic C1-8 (substituted) alkyl, (substituted) alkenyl; R5, R6 = H, halo, nitro, cyano, OH, CO<sub>2</sub>H, linear-, branched-, or cyclic C1-8 (substituted) alkyl, linear-, branched-, or cyclic C1-8 (substituted) alkoxy, C6-12 (substituted) aryl, C7-14 (substituted) aralkyl; R7 = linear-, branched-, or cyclic C1-8 (substituted) alkyl, linear-, branched-, or cyclic C1-8 (substituted) alkenyl; R8-11 = H, halo, C1-4 (substituted) alkyl;  $\geq 1$  of R8-11 is H; A = single bond, divalent org. group which may be substituted; m + n + p = 1, 0  $\leq$  m  $\leq$  1, 0  $\leq$  n  $\leq$  1, 0  $\leq$  p  $\leq$  1]. The **resist** is applicable for patterning of semiconductor devices. A **resist** comprising poly(1-methylcyclohexyl methacrylate) and Ph<sub>3</sub>S<sup>+</sup>.CF<sub>3</sub>SO<sub>3</sub><sup>-</sup> showed high sensitivity and gave a submicron pos. pattern by using excimer laser.

IT 178889-53-7P

(radiation-sensitive **resist** compn.)

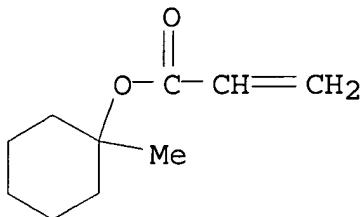
RN 178889-53-7 HCPLUS

CN 2-Propenoic acid, 2-methyl-, tricyclo[3.3.1.13,7]dec-1-yl ester, polymer with 4-ethenylphenol and 1-methylcyclohexyl 2-propenoate (9CI) (CA INDEX NAME)

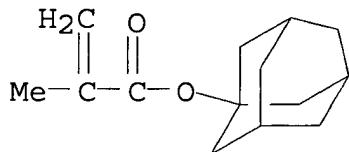
CM 1

CRN 178889-47-9

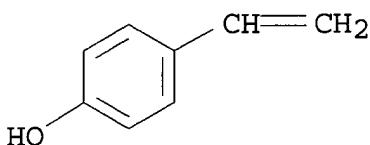
CMF C10 H16 O2



CM 2

CRN 16887-36-8  
CMF C14 H20 O2

CM 3

CRN 2628-17-3  
CMF C8 H8 O

IC ICM G03F007-039  
ICS G03F007-004; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76  
ST radiation sensitive **resist** compn; cycloalkyl arylate polymer **resist**; acid generating compd **resist**; semiconductor device **resist** radiation sensitive  
IT Semiconductor devices  
(patterning; radiation-sensitive **resist** compn. for)  
IT **Resists**  
(radiation-sensitive **resist** compn.)  
IT 66003-78-9, Triphenylsulfonium triflate  
(acid generator; radiation-sensitive **resist** compn.)

IT 120763-30-6P, 1-Methylcyclohexyl methacrylate homopolymer  
178889-46-8P 178889-48-0P 178889-50-4P 178889-51-5P  
178889-52-6P **178889-53-7P** 178889-54-8P  
(radiation-sensitive **resist** compn.)

=> file reg  
FILE 'REGISTRY'  
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.  
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COPYRIGHT (C) 2002 American Chemical Society (ACS)

=> d his

FILE 'HCAPLUS'  
L1 25917 S TAKEDA ?/AU OR TAKANOBU ?/AU  
L2 88783 S WATANABE ?/AU OR OSAMU ?/AU  
L3 989 S HIRAHARA ?/AU OR KAZUHIRO ?/AU  
L4 5632 S TAKEMURA ?/AU OR KATSUYA ?/AU  
L5 207 S KUSAKI ?/AU OR WATARU ?/AU  
L6 12138 S SEKI ?/AU OR AKIHIRO ?/AU  
L7 1 S L1 AND L2 AND L3 AND L4 AND L5 AND L6  
SEL L7 1 RN

FILE 'REGISTRY'  
L8 5 S E1-E5  
L9 5 S L8 AND PMS/CI  
SEL L9 1,3,4 RN  
L10 3 S E6-E8

FILE 'HCAPLUS'  
L11 4 S L10

FILE 'LREGISTRY'  
L12 STR  
L13 STR  
L14 STR

FILE 'REGISTRY'  
L15 SCR 2043  
L16 22 S L12 AND L13 AND L15  
L17 4919 S L12 AND L13 AND L15 FUL  
SAV L17 LEE512/A

FILE 'LREGISTRY'  
L18 STR

FILE 'REGISTRY'  
L19 50 S L12 AND L18 AND L15 SSS SAM SUB=L17

FILE 'LREGISTRY'  
L20 STR L18

FILE 'REGISTRY'  
L21 6 S L12 AND L20 AND L15 SSS SAM SUB=L17  
L22 62 S L12 AND L20 AND L15 SSS FUL SUB=L17

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L24      47 S L23 AND L22

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L25      40 S L24

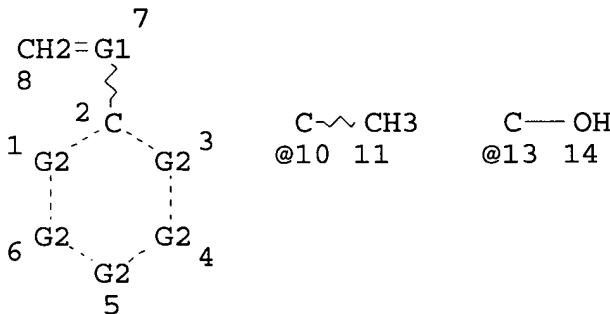
FILE 'REGISTRY'
L26      16 S L22 AND 2/NC

FILE 'HCAPLUS'
L27      42 S L22
L28      30 S L26
L29      144413 S PHOTORESIST? OR RESIST OR RESISTS OR PHOTOMASK? OR MASK
L30      40 S (L25 OR L27 OR L28) AND L29
L31      29 S L28 AND L29
L32      39 S L25 AND L29
L33      40 S L27 AND L29
L34      26 S L31 NOT L11
L35      10 S (L32 OR L33) NOT (L11 OR L34)
L36      15 S L34 AND 1907-2000/PY
L37      19 S L34 AND 1907-2001/PY
L38      6 S L35 AND 1907-2001/PY

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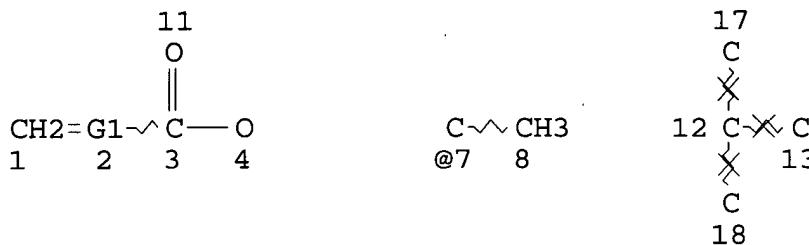
=> d 122 que stat  
L12 STR



VAR G1=CH/10  
VAR G2=CH/13  
NODE ATTRIBUTES:  
DEFAULT MLEVEL IS ATOM  
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:  
RING(S) ARE ISOLATED OR EMBEDDED  
NUMBER OF NODES IS 12

STEREO ATTRIBUTES: NONE  
L13 STR



VAR G1=CH/7

NODE ATTRIBUTES:

CONNECT IS E2 RC AT 4

CONNECT IS E4 RC AT 12

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED

NUMBER OF NODES IS 11

STEREO ATTRIBUTES: NONE

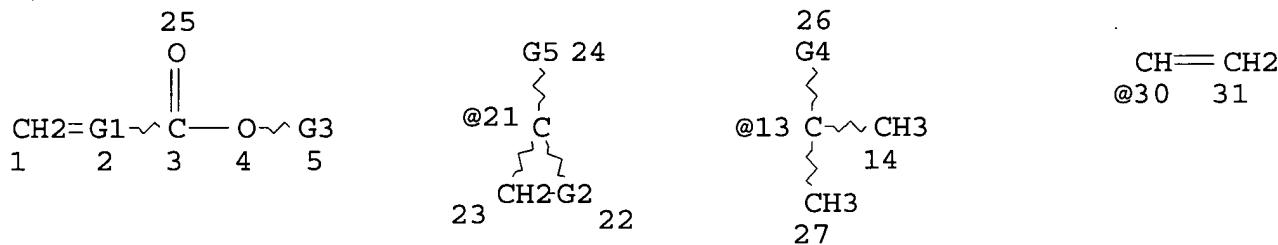
L15 SCR 2043

L17 4919 SEA FILE=REGISTRY SSS FUL L12 AND L13 AND L15

L20 STR

C~~CH<sub>3</sub>

@8 9



Cb @33

VAR G1=CH/8

REP G2=(1-5) CH2

VAR G3=21/13

VAR G4=I-PR/33/30/AC/CN

VAR G5=ME/ET/I-PR/33/30/AC/CN

NODE ATTRIBUTES:

CONNECT IS E1 RC AT 33

DEFAULT MLEVEL IS ATOM

DEFAULT ECLEVEL IS LIMITED

## GRAPH ATTRIBUTES:

RING(S) ARE ISOLATED OR EMBEDDED  
 NUMBER OF NODES IS 19

## STEREO ATTRIBUTES: NONE

L22 62 SEA FILE=REGISTRY SUB=L17 SSS FUL L12 AND L20 AND L15

100.0% PROCESSED 3164 ITERATIONS  
 SEARCH TIME: 00.00.01

62 ANSWERS

=> file hcaplus  
 FILE 'HCAPLUS'

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=> d 111 1-4 cbib abs hitstr hitrn

L11 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2002 ACS

2001:817219 Document No. 135:350570 Chemically amplified positive resist compositions with improved resolution, pattern profile and focal latitude for deep UV lithography. Ohsawa, Youichi; Watanabe, Jun; Takeda, Takanobu; Seki, Akihiro (Japan). U.S. Pat. Appl. Publ. US 20010038971 A1 20011108, 33 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-799052 20010306. PRIORITY: JP 2000-61350 20000307.

AB A chem. amplified, pos. resist compn. is provided comprising (A) a photoacid generator and (B) a resin which changes its solv. in an alkali developer under the action of acid and has substituents of the formula: Ph-(CH<sub>2</sub>)<sub>n</sub>OCH(CH<sub>2</sub>CH<sub>3</sub>)- (n = 0,1). The compn. has many advantages including improved focal latitude, improved resoln., minimized line width variation or shape degrdn. even on long-term PED, minimized defect left after coating, development and stripping, and improved pattern profile after development and is suited for microfabrication by any lithog., esp. deep UV lithog.

IT 362478-99-7D, 1,4-Butanediol divinyl ether-p-hydroxystyrene-1-ethylcyclopentyl methacrylate copolymer, 1-benzoyloxypropyl derivs. (chem. amplified pos. resist compns. with improved resoln., pattern profile and focal latitude for deep UV lithog.)

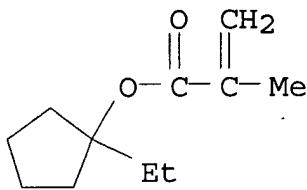
RN 362478-99-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 1,4-bis(ethoxyloxy)butane and 4-ethenylphenol (9CI) (CA INDEX NAME)

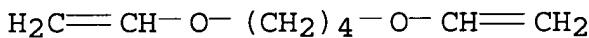
CM 1

CRN 266308-58-1  
 CMF C11 H18 O2

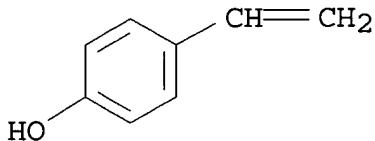
*(search of inventors' registry  
 numbers)*



CM 2

CRN 3891-33-6  
CMF C<sub>8</sub> H<sub>14</sub> O<sub>2</sub>

CM 3

CRN 2628-17-3  
CMF C<sub>8</sub> H<sub>8</sub> O

IT 362478-99-7D, 1,4-Butanediol divinyl ether-p-hydroxystyrene-1-ethylcyclopentyl methacrylate copolymer, 1-benzyloxypropyl derivs.  
(chem. amplified pos. resist compns. with improved resoln., pattern profile and focal latitude for deep UV lithog.)

L11 ANSWER 2 OF 4 HCPLUS COPYRIGHT 2002 ACS  
 2001:781404 Document No. 135:336907 Chemically amplified positive resist compositions with improved resolution, pattern profile and focal latitude for deep UV lithography. Ohsawa, Youichi; Watanabe, Jun; Takeda, Takanobu; Seki, Akihiro (Japan). U.S. Pat. Appl. Publ. US 20010033994 A1 20011025, 34 pp. (English). CODEN: USXXCO.  
 APPLICATION: US 2001-799009 20010306. PRIORITY: JP 2000-61357 20000307.

AB A chem. amplified, pos. resist compn. is provided comprising (A) a photoacid generator and (B) a resin which changes its solv. in an alkali developer under the action of acid and has substituents of the formula: C<sub>6</sub>H<sub>11</sub> -(CH<sub>2</sub>)<sub>n</sub>OCH(CH<sub>2</sub>CH<sub>3</sub>) - wherein C<sub>6</sub>H<sub>11</sub> is cyclohexyl and n = 0,1. The compn. has many advantages including improved focal latitude, improved resoln., minimized line width variation or

shape degrdn. even on long-term PED, minimized defect left after coating, development and stripping, and improved pattern profile after development and is suited for microfabrication by any lithog., esp. deep UV lithog.

IT 362478-99-7D, 1,4-Butanediol divinyl ether-p-hydroxystyrene-1-ethylcyclopentyl methacrylate copolymer, cyclohexyloxypropyl ethers

(chem. amplified pos. resist compns. with improved resoln., pattern profile and focal latitude for deep UV lithog.)

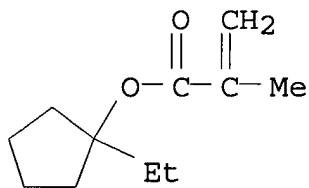
RN 362478-99-7 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 1,4-bis(ethenyl)butane and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

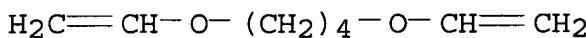
CMF C11 H18 O2



CM 2

CRN 3891-33-6

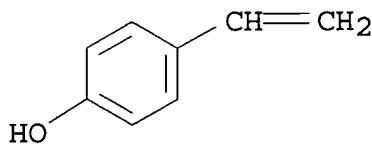
CMF C8 H14 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



IT 362478-99-7D, 1,4-Butanediol divinyl ether-p-hydroxystyrene-

1-ethylcyclopentyl methacrylate copolymer, cyclohexyloxypropyl ethers

(chem. amplified pos. resist compns. with improved resoln., pattern profile and focal latitude for deep UV lithog.)

L11 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2002 ACS  
 2001:763485 Document No. 135:310937 Chemical amplification resist compositions. Takeda, Takanobu; Watanabe, Osamu; Hirahara, Kazuhiro; Takemura, Katsuya; Kusaki, Wataru; Seki, Akihiro (Japan). U.S. Pat. Appl. Publ. US 20010031421 A1 20011018, 12 pp. (English). CODEN: USXXCO. APPLICATION: US 2001-800512 20010308. PRIORITY: JP 2000-64277 20000309.

AB A chem. amplification pos. resist compn. comprises a polymeric mixt. of a polyhydroxystyrene deriv. having a mol. wt. of 1000-500,000 and a copolymer of hydroxystyrene and (meth)acrylate having a mol. wt. of 1000-500,000, as a base resin, has improved dry etching resistance, high sensitivity, high resoln., and process adaptability, and is suppressed in the slimming of pattern films after development with aq. base.

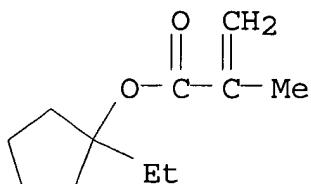
IT 362478-98-6, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene-isobornyl acrylate copolymer 362478-99-7, 1,4-Butanediol divinyl ether-1-ethylcyclopentyl methacrylate-p-hydroxystyrene copolymer 362479-01-4  
 (chem. amplification resist compns. contg.)

RN 362478-98-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol and rel-(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

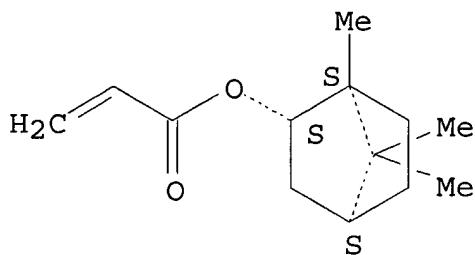
CRN 266308-58-1  
 CMF C11 H18 O2



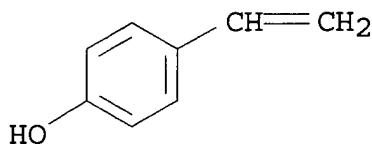
CM 2

CRN 5888-33-5  
 CMF C13 H20 O2

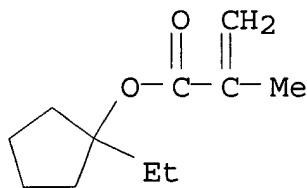
Relative stereochemistry.



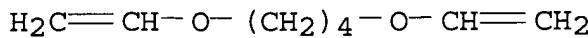
CM 3

CRN 2628-17-3  
CMF C8 H8 ORN 362478-99-7 HCPLUS  
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 1,4-bis(ethenyloxy)butane and 4-ethenylphenol (9CI) (CA INDEX NAME)

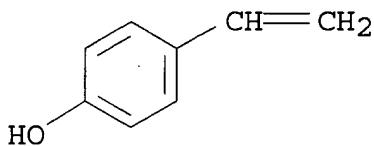
CM 1

CRN 266308-58-1  
CMF C11 H18 O2

CM 2

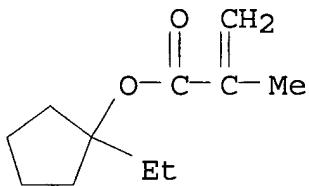
CRN 3891-33-6  
CMF C8 H14 O2

CM 3

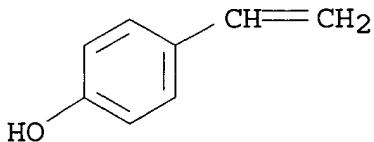
CRN 2628-17-3  
CMF C8 H8 O

RN 362479-01-4 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with  
 4-ethenylphenol and (tetrahydro-2-furanyl)methyl  
 2-methyl-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1  
CMF C11 H18 O2

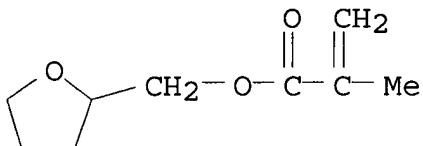
CM 2

CRN 2628-17-3  
CMF C8 H8 O

CM 3

CRN 2455-24-5

CMF C9 H14 O3



IT 362478-98-6, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene-isobornyl acrylate copolymer 362478-99-7, 1,4-Butanediol divinyl ether-1-ethylcyclopentyl methacrylate-p-hydroxystyrene copolymer 362479-01-4  
(chem. amplification resist compns. contg.)

L11 ANSWER 4 OF 4 HCPLUS COPYRIGHT 2002 ACS  
2001:709843 Document No. 135:264558 Chemically amplified positive resist composition and patterning method. Takeda, Takanobu; Watanabe, Jun; Takemura, Katsuya; Koizumi, Kenji (Shin-Etsu Chemical Co., Ltd., Japan). Eur. Pat. Appl. EP 1136885 A1 20010926, 60 pp.  
DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2001-302636 20010321. PRIORITY: JP 2000-79414 20000322.

AB A chem. amplified, pos. resist compn. comprises (1) org. solvent, (2) polymer having acid labile groups, (3) photoacid generator, (4) basic compd., and (5) compd. contg. at least two allyloxy groups of R<sub>1</sub>R<sub>2</sub>C=CR<sub>3</sub>CHR<sub>4</sub>O (R<sub>1</sub>,<sub>4</sub> = H, C<sub>1</sub>-12 alkyl; R<sub>1</sub> and R<sub>3</sub>, or R<sub>2</sub> and R<sub>3</sub> may form a ring) in a mol. The resist compn. has a high sensitivity, resln., dry etching resistance and process adaptability, and is improved in the slimming of a pattern film after development with an aq. base soln. The resist compn. is also applicable to the thermal flow process suited for forming a microsize contact hole pattern for the fabrication of VLSI.

IT 362478-98-6 362478-99-7 362479-01-4  
(chem. amplified pos. resist compn. contg.)

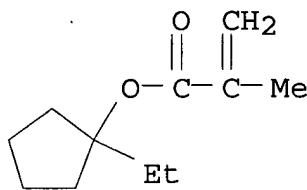
RN 362478-98-6 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol and rel-(1R,2R,4R)-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl 2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

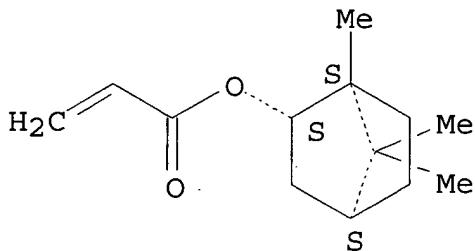
CMF C11 H18 O2



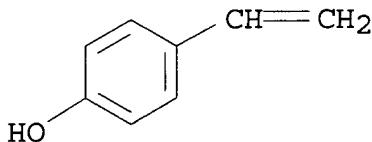
CM 2

CRN 5888-33-5  
CMF C13 H20 O2

Relative stereochemistry.



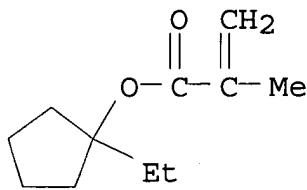
CM 3

CRN 2628-17-3  
CMF C8 H8 O

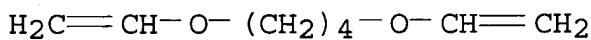
RN 362478-99-7 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 1,4-bis(ethenyloxy)butane and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

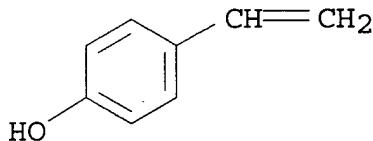
CRN 266308-58-1  
CMF C11 H18 O2



CM 2

CRN 3891-33-6  
CMF C8 H14 O2

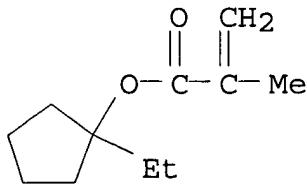
CM 3

CRN 2628-17-3  
CMF C8 H8 O

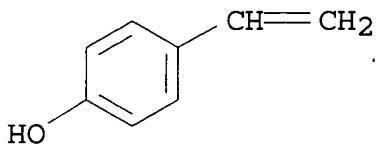
RN 362479-01-4 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethyliclopropyl ester, polymer with  
4-ethenylphenol and (tetrahydro-2-furanyl)methyl  
2-methyl-2-propenoate (9CI) (CA INDEX NAME)

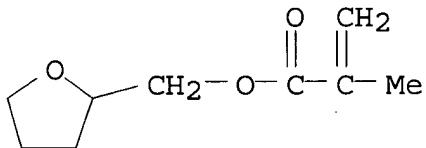
CM 1

CRN 266308-58-1  
CMF C11 H18 O2

CM 2

CRN 2628-17-3  
CMF C8 H8 O

CM 3

CRN 2455-24-5  
CMF C9 H14 O3IT 362478-98-6 362478-99-7 362479-01-4  
(chem. amplified pos. resist compn. contg.)

=&gt; d 137 1-19 cbib abs hitstr hitind

L37 ANSWER 1 OF 19 HCPLUS COPYRIGHT 2002 ACS  
 2001:469366 Document No. 135:68557 Photolithography and its  
**chemically-amplified photoresists**  
 containing specific sulfonyldiazomethane compounds. Seki, Akihiro;  
 Takemura, Katsuya; Osawa, Yoichi; Watanabe, Atsushi; Nagura,  
 Shigehiro (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn.  
 Kokai Tokkyo Koho JP 2001174984 A2 20010629, 49 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-294695 20000927.  
 PRIORITY: JP 1999-285450 19991006.

AB The **photoresists** contain (i)  $[\text{C}_6\text{H}_5\text{-p-}\text{q}(\text{R}_1\text{CO}_2)\text{qR}_2\text{pSO}_2]_n\text{C:N}_2(\text{GR}_3)_m$  ( $\text{R}_1, \text{R}_3 = \text{C}_1\text{-10 alkyl, C}_6\text{-14 aryl}; \text{R}_2 = \text{C}_1\text{-6 alkyl}; \text{G} = \text{SO}_2, \text{CO}; \text{p} = 0\text{-4 integer; q} = 1\text{-5 integer; 1} \leq \text{p} + \text{q} \leq 5; \text{n} = 1, 2; \text{m} = 0, 1; \text{m} + \text{n} = 2$ ) or (ii)  $\text{R}_1\text{CO}_2\text{-p-C}_6\text{H}_4\text{SO}_2\text{C:N}_2\text{SO}_2\text{-p-C}_6\text{H}_4\text{OCOR}_1$  ( $\text{R}_1 = \text{the same definition as above}$ ) as photoacid generators. The **photoresists** may comprise (.alpha.-methyl-)p-hydroxystyrene-(meth)acrylate ester copolymers with  $M_w$  3,000-100,000 contg.  $1\text{-}10\%$  (.noteq.0)-mol% acid-labile substituents. Markush structures for preferable

acid-labile substituents are given. Photolithog. employing the **photoresists** and .ltoreq.300-nm high-energy beam or electron beam is also claimed. The **photoresists** show excellent post-development profiles.

IT 326925-68-2

(chem.-amplified pos. **photoresists**

contg. alkali-soly.-improved sp. sulfonylazomethanes for far-UV photolithog.)

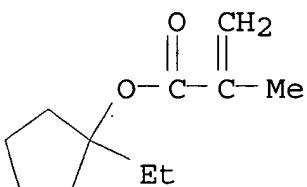
RN 326925-68-2 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

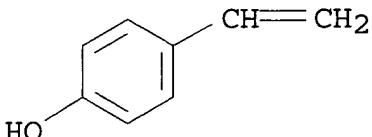
CMF C11 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-004

ICS C07C381-14; C08K005-09; C08K005-13; C08K005-16; C08K005-41; C08K005-43; C08L025-02; C08L025-18; C08L033-02; C08L033-04; C08L035-00; G03F007-039; G03F007-26

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 25, 37

ST sulfonylazomethane photoacid generator **chem**  
**amplified photoresist**; hydroxystyrene methacrylate copolymer **chem amplified photoresist**; development profile improved far UV **photoresist**IT Positive **photoresists**

(chem. amplified; chem.-amplified pos. photoresists contg. alkali-soly.-improved sp. sulfonylazomethanes for far-UV photolithog.)

IT Photolithography  
 (chem.-amplified pos. photoresists contg. alkali-soly.-improved sp. sulfonylazomethanes for far-UV photolithog.)

IT 2628-17-3D, p-Hydroxystyrene, ethoxyethyl ether, 1,2-propanediol divinyl ether copolymer 2628-17-3D, p-Hydroxystyrene, ethoxyethyl ether, tert-butoxycabonic ester, 1,2-propanediol divinyl ether copolymer 59269-51-1D, Polyhydroxystyrene, ethoxyethyl ether 155214-68-9D, ethoxyethyl ether 189257-17-8, Poly(hydroxystyrene) acetate 326925-68-2 326925-73-9 345580-95-2 346428-50-0 346428-52-2  
 (chem.-amplified pos. photoresists contg. alkali-soly.-improved sp. sulfonylazomethanes for far-UV photolithog.)

IT 104884-57-3P 327614-10-8P 334700-88-8P 334700-90-2P  
 334700-93-5P 334700-97-9P 346428-58-8P 346428-65-7P  
 (in prepn. of sulfonyldiazomethane derivs. as photoacid generators of chem.-amplified photoresists)

IT 334700-94-6P 334700-95-7P 334700-99-1P 334701-00-7P  
 (in prepn. of sulfonyldiazomethane derivs. as photoacid generators of chem.-amplified photoresists)

IT 70-11-1, .alpha.-Bromoacetophenone 75-09-2, Dichloromethane, reactions 75-36-5, Acetyl chloride 79-03-8, Propionyl chloride 98-88-4, Benzoyl chloride 637-89-8, 4-Hydroxythiophenol 941-55-9, p-Toluenesulfonylazide 3282-30-2, Pivaloyl chloride 68483-71-6, Chloromethylcyclohexyl sulfide  
 (in prepn. of sulfonyldiazomethane derivs. as photoacid generators of chem.-amplified photoresists)

IT 39153-56-5, Bis(2,4-dimethylphenylsulfonyl)diazomethane 161453-44-7 161453-47-0 334701-01-8  
 (photoacid generators; chem.-amplified pos. photoresists contg. alkali-soly.-improved sp. sulfonylazomethanes for far-UV photolithog.)

IT 334700-91-3P 334700-96-8P  
 (photoacid generators; chem.-amplified pos. photoresists contg. alkali-soly.-improved sp. sulfonylazomethanes for far-UV photolithog.)

L37 ANSWER 2 OF 19 HCPLUS COPYRIGHT 2002 ACS  
 2001:463218 Document No. 135:68552 Novel sulfonium salts, novel iodonium salts, photoacid generators, chemically amplified resists, and method for pattern formation. Osawa, Yoichi; Watanabe, Atsushi; Watanabe, Satoshi; Nagura, Shigehiro (Shin-Etsu Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2001172251 A2 20010626, 33 pp.

(Japanese). CODEN: JKXXAF. APPLICATION: JP 2000-301972 20001002.  
PRIORITY: JP 1999-285143 19991006.

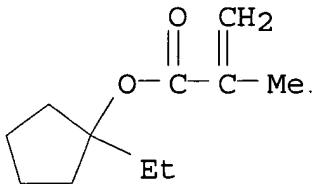
AB Onium salts PhCR<sub>1</sub>R<sub>2</sub>C<sub>6</sub>H<sub>4</sub>SO<sub>3</sub>--p R<sub>3</sub>aM<sup>+</sup> (R<sub>1</sub> = H, C<sub>1</sub>-6 linear, branched, or cyclic alkyl; R<sub>2</sub> = H, C<sub>1</sub>-6 linear, branched, or cyclic alkyl, Ph; R<sub>3</sub> = C<sub>1</sub>-10 (un)substituted linear, branched, or cyclic alkyl, C<sub>6</sub>-14 (un)substituted aryl; M = S, I; a = 3 when M = S; a = 2 when M = I). Further specified Markush structures of sulfonium and iodonium salts are also given. Also claimed are (1) **chem. amplified resists** contg. (A) polymers which change their solv. in alk. developers by acids, (B) radiation-induced photoacid generating onium salts, and optionally (C) radiation-induced photoacid generators other than B and (2) pattern formation by **masked** exposure of the heated **resist**, formed on a substrate, under electron beam or high-energy beam of wavelength  $\lambda \leq 300$  nm via a **photomask** followed by treatment and development. Further specification of the **resist** compns. are also given. Patterns with excellent profiles are obtained even under long post exposure bake.

IT 326925-68-2, 1-Ethylcyclopentyl methacrylate-p-hydroxystyrene copolymer  
(sulfonium and iodonium salts as radiation-induced photoacid generators in **chem. amplified resists** for UV and electron beam exposure)

RN 326925-68-2 HCPLUS  
CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

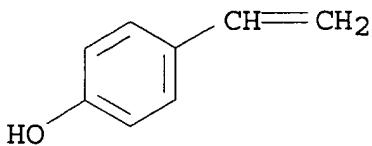
CM 1

CRN 266308-58-1  
CMF C<sub>11</sub> H<sub>18</sub> O<sub>2</sub>



CM 2

CRN 2628-17-3  
CMF C<sub>8</sub> H<sub>8</sub> O



IC ICM C07C309-73  
ICS C07C381-12; C09K003-00; G03F007-004; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 25

ST sulfonium salt radiation induced photoacid generator; iodonium salt radiation induced photoacid generator; onium salt radiation induced photoacid generator; **chem amplified resist** onium photoacid generator; far UV photolithog patterning **resist**; electron beam photolithog patterning **resist**; photolithog patterning **chem amplified resist**

IT **Photoresists**  
(UV; sulfonium and iodonium salts as radiation-induced photoacid generators in **chem. amplified resists** for UV and electron beam exposure)

IT **Photoresists**  
(**chem.-amplified**; sulfonium and iodonium salts as radiation-induced photoacid generators in **chem. amplified resists** for UV and electron beam exposure)

IT Onium compounds  
(iodonium, photoacid generator; sulfonium and iodonium salts as radiation-induced photoacid generators in **chem. amplified resists** for UV and electron beam exposure)

IT Sulfonium compounds  
(photoacid generator; sulfonium and iodonium salts as radiation-induced photoacid generators in **chem. amplified resists** for UV and electron beam exposure)

IT Electron beam **resists**  
Photolithography  
(sulfonium and iodonium salts as radiation-induced photoacid generators in **chem. amplified resists** for UV and electron beam exposure)

IT 345580-85-0P  
(photoacid generator; sulfonium and iodonium salts as radiation-induced photoacid generators in **chem. amplified resists** for UV and electron beam exposure)

IT 39153-56-5, Bis(2,4-dimethylphenylsulfonyl)diazomethane  
66003-78-9, Triphenylsulfonium trifluoromethanesulfonate  
138529-81-4, Bis(cyclohexylsulfonyl)diazomethane 161453-44-7

195723-94-5, (4-tert-Butoxyphenyl)diphenylsulfonium  
10-camphorsulfonate 205514-94-9, N-10-  
Camphorsulfonyloxysuccinimide 345580-87-2 345580-88-3  
(photoacid generator; sulfonium and iodonium salts as  
radiation-induced photoacid generators in **chem.**  
**amplified resists** for UV and electron beam  
exposure)

IT 345580-89-4P 345580-90-7P 345580-92-9P  
(sulfonium and iodonium salts as radiation-induced photoacid  
generators in **chem.** **amplified resists**  
for UV and electron beam exposure)

IT 24979-70-2D, Poly(p-hydroxystyrene), ethers 326925-68-2,  
1-Ethylcyclopentyl methacrylate-p-hydroxystyrene copolymer  
345580-95-2  
(sulfonium and iodonium salts as radiation-induced photoacid  
generators in **chem.** **amplified resists**  
for UV and electron beam exposure)

IT 4270-70-6P, Triphenylsulfonium chloride 61358-24-5P,  
Bis(4-tert-butylphenyl)iodonium hydrogen sulfate 199440-87-4P,  
4-Phenylmethylbenzenesulfonic acid 199733-54-5P,  
4-tert-Butoxyphenyldiphenylsulfonium chloride 326925-53-5P,  
4-tert-Butylphenyldiphenylsulfonium chloride 345580-93-0P  
345580-94-1P  
(sulfonium and iodonium salts as radiation-induced photoacid  
generators in **chem.** **amplified resists**  
for UV and electron beam exposure)

IT 75-09-2, Dichloromethane, reactions 98-06-6, tert-Butylbenzene  
101-81-5, Diphenylmethane 108-90-7, Chlorobenzene, reactions  
519-73-3, Triphenylmethane 778-22-3, 2,2-Diphenylpropane  
945-51-7, Diphenyl sulfoxide 3972-56-3, 4-tert-Butylchlorobenzene  
7664-93-9, Sulfuric acid, reactions 7758-05-6, Potassium iodate  
7790-94-5, Chlorosulfonic acid 18995-35-2, 4-tert-  
Butoxychlorobenzene  
(sulfonium and iodonium salts as radiation-induced photoacid  
generators in **chem.** **amplified resists**  
for UV and electron beam exposure)

L37 ANSWER 3 OF 19 HCPLUS COPYRIGHT 2002 ACS

2001:356328 Document No. 134:346477 **Chemically**

**amplified positive resist** composition and  
 patterning method. Takemura, Katsuya; Koizumi, Kenji; Kaneko,  
 Tatsushi; Sakurada, Toyohisa (Shin-Etsu Chemical Co., Ltd., Japan).  
 Eur. Pat. Appl. EP 1099983 A1 20010516, 53 pp. DESIGNATED  
 STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE,  
 MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW.  
 APPLICATION: EP 2000-310001 20001110. PRIORITY: JP 1999-323332  
 19991112.

AB The invention relates to a **chem.-amplified pos.**  
**resist** compn. for forming a contact hole pattern by the  
 thermal flow process. A method for forming a contact hole pattern  
 using a **chem.-amplified pos. resist**  
 compn. comprising a polymer as the base resin involves the thermal

flow step of heat treating the contact hole pattern for further reducing the size of contact holes. A **chem.-amplified pos. resist** compn. comprising a base resin and a compd. contg. two to six functional groups, specifically alkenyloxy, acetal and ortho-ester groups in the mol. is suitable for forming a contact hole pattern by the thermal flow process. The invention also relates to a method for forming a microsize contact hole pattern in the manuf. of VLSI.

IT 326925-68-2

(chem.-amplified pos. resist compn.

comprising base resin and suitable for forming contact-hole pattern by thermal flow in VLSI manufg. and contg.)

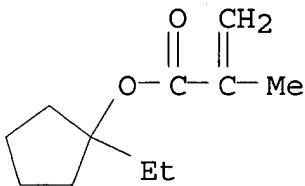
RN 326925-68-2 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

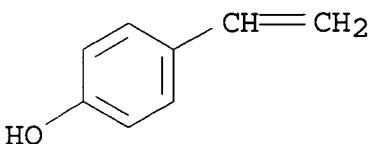
CMF C11 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O

IC ICM G03F007-039  
ICS G03F007-004

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST pos **resist** alkenyloxy acetal ortho ester contact hole patternIT **Positive photoresists**  
(chem.-amplified pos. resist compn.)

comprising base resin and suitable for forming contact-hole pattern by thermal flow in VLSI manufg.)

IT Polyoxyalkylenes, reactions  
 (chem.-amplified pos. resist compn.  
 comprising base resin and suitable for forming contact-hole pattern by thermal flow in VLSI manufg. and contg.)

IT 183-97-1 764-99-8 1067-51-2 3754-60-7 3891-33-6D,  
 1,4-Butanediol divinyl ether, reaction products with hydroxystyrene homopolymer ethoxyethyl ether 3975-12-0 17351-75-6 19309-29-6  
 135965-88-7 323193-21-1 338438-46-3 338438-47-4  
 (additive for controlling flow rate in thermal flow process of patterning using chem.-amplified pos.  
 resist compn.)

IT 24979-70-2D, acetals and esters 147625-42-1D, acetals  
 150746-92-2 326925-68-2 326925-71-7 338438-44-1  
 338438-45-2  
 (chem.-amplified pos. resist compn.  
 comprising base resin and suitable for forming contact-hole pattern by thermal flow in VLSI manufg. and contg.)

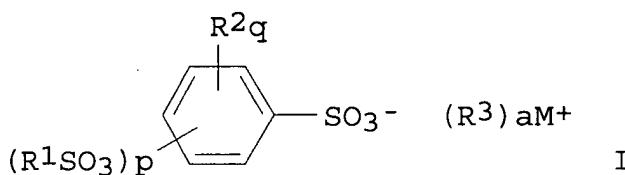
IT 102-71-6, Triethanolamine, reactions  
 (chem.-amplified pos. resist compn.  
 comprising base resin and suitable for forming contact-hole pattern by thermal flow in VLSI manufg. and contg.)

IT 39153-56-5 138529-81-4, Bis(cyclohexylsulfonyl)diazomethane  
 138529-84-7 161453-44-7 195723-94-5, (4-tert-Butoxyphenyl)diphenylsulfonium 10-camphorsulfonate  
 (photoacid generator; ; chem.-amplified pos.  
 resist compn. comprising base resin and suitable for forming contact-hole pattern by thermal flow in VLSI manufg. and contg.)

IT 141-78-6, Ethyl acetate, reactions 84540-57-8, Propylene glycol methyl ether acetate  
 (solvent for chem.-amplified pos.  
 resist compn. comprising base resin)

IT 11114-17-3, FC 430  
 (surfactant for chem.-amplified pos.  
 resist compn. comprising base resin)

L37 ANSWER 4 OF 19 HCPLUS COPYRIGHT 2002 ACS  
 2001:133716 Document No. 134:200517 Novel onium salts as photoacid generators for resist compositions and patterning process.  
 Ohsawa, Youichi; Watanabe, Jun; Kusaki, Wataru; Watanabe, Satoshi; Nagata, Takeshi; Nagura, Shigehiro (Shin-Etsu Chemical Co., Ltd., Japan). Eur. Pat. Appl. EP 1077391 A1 20010221, 77 pp.  
 DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO. (English). CODEN: EPXXDW. APPLICATION: EP 2000-306997 20000816. PRIORITY: JP 1999-230122 19990816; JP 1999-230126 19990816.



AB Disclosed is a **chem. amplification** type **resist** compn. that comprises as a photoacid generator novel onium salts of the formula I ( $\text{R}^1 = \text{C}1\text{-10 alkyl, C}6\text{-14 aryl}$ ;  $\text{R}^2 = \text{H, C}1\text{-6 alkyl}$ ;  $\text{p} = 1\text{-5, q} = 0\text{-4, p+q} = 5$ ;  $\text{R}^3 = \text{C}1\text{-10 alkyl, C}6\text{-14 aryl}$ ;  $\text{M} = \text{S, I}$ ;  $\text{a} = 3$  when  $\text{M}=\text{S}$ , 2 when  $\text{M}=\text{I}$ ). The **chem. amplification** type **resist** comprising the onium salt as a photoacid generator is suited for microfabrication, esp. by deep UV lithog. and has many advantages including improved resln., minimized line width variation or shape degrdn. even on long-term post-exposure delay, minimized defect after coating, development and stripping, and improved pattern profile after development.

IT 326925-68-2, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate copolymer 326925-70-6

(photoacid generators for **photoresist** compns. based on sulfonium and iodonium salts and polymers which change their solv. in alk. developer by acid action)

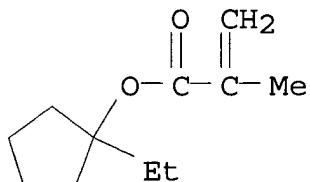
RN 326925-68-2 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 266308-58-1

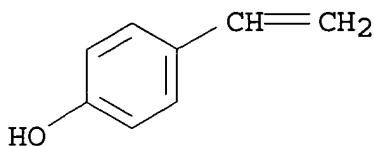
CMF C11 H18 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O

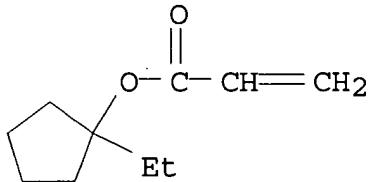


RN 326925-70-6 HCPLUS

CN 2-Propenoic acid, 1-ethylcyclopentyl ester, polymer with  
4-ethenylphenol (9CI) (CA INDEX NAME)

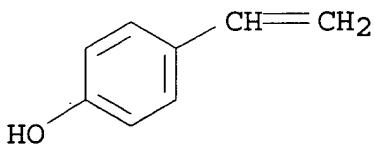
CM 1

CRN 326925-69-3

CMF C<sub>10</sub> H<sub>16</sub> O<sub>2</sub>

CM 2

CRN 2628-17-3

CMF C<sub>8</sub> H<sub>8</sub> O

IC ICM G03F007-004

ICS G03F007-039; C07C381-12; C07C309-73; C07C309-71

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

Section cross-reference(s): 76

ST onium salt photoacid generator **photoresist chem**  
**amplified UV lithog**IT Photolithography  
**Photoresists**(UV; sulfonium and iodonium salts as photoacid generators for  
**chem. amplified resist compns.** and  
patterning process)

IT Onium compounds

(iodonium; onium salts as photoacid generators for **resist** compns. and patterning process)

IT Sulfonium compounds  
 (sulfonium and iodonium salts as photoacid generators for chem. amplified **resist** compns. and patterning process)

IT 102-82-9, Tri-n-butylamine 3235-51-6, Tris(2-methoxyethyl)amine (basic compd.; photoacid generators for **photoresist** compns. based on sulfonium and iodonium salts and patterning process)

IT 69-72-7, Salicylic acid, processes 126-00-1  
 (photoacid generators for **photoresist** compns. based on sulfonium and iodonium salts and patterning process)

IT 24979-70-2D, Poly(p-hydroxystyrene), ethoxyethyl ether, tert-butoxycarbonate and acetate derivs. 71545-61-4D, reaction products with poly(p-hydroxystyrene) contg. ether and ester groups 326925-68-2, p-Hydroxystyrene-1-ethylcyclopentyl methacrylate copolymer 326925-70-6 326925-71-7 326925-72-8 326925-73-9  
 (photoacid generators for **photoresist** compns. based on sulfonium and iodonium salts and polymers which change their solv. in alk. developer by acid action)

IT 97-64-3, Ethyl lactate 84540-57-8, Propylene glycol methyl ether acetate  
 (solvent; photoacid generators for **photoresist** compns. based on sulfonium and iodonium salts and patterning process)

L37 ANSWER 5 OF 19 HCPLUS COPYRIGHT 2002 ACS  
 2000:418051 Document No. 133:51183 **Resist** material and manufacture thereof. Yamana, Shinji (NEC Corp., Japan). Jpn. Kokai Tokkyo Koho JP 2000171977 A2 20000623, 8 pp. (Japanese).  
 CODEN: JKXXAF. APPLICATION: JP 1998-350621 19981210.

AB The title **resist** material contains a base resin to which Ph-contg. protective groups link. A method of manufg. the material is also claimed, in which Ph-contg. protective groups with mol. wt. 100-200 are add to the base resin after polymn. thereof or monomers protected with the protective groups and ones having no protective group are polymd. to give the base resin. The material provides high resoln. **resist** patterns with excellent resistance to etching by using KrF excimer laser.

IT 275378-82-0  
 (**resist** contg. base polymer with protective group)

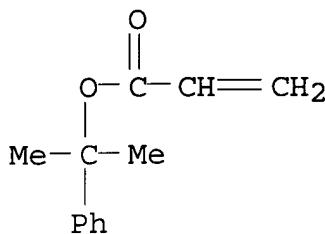
RN 275378-82-0 HCPLUS

CN 2-Propenoic acid, 1-methyl-1-phenylethyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

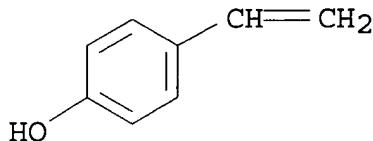
CM 1

CRN 67704-03-4

CMF C12 H14 O2



CM 2

CRN 2628-17-3  
CMF C8 H8 O

IC ICM G03F007-039  
 ICS C08F008-14; C08F212-14; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 38  
 ST resist base polymer phenyl protective group  
 IT Resist  
 (resist contg. base polymer with protective group)  
 IT 275378-79-5 275378-81-9 **275378-82-0**  
 (resist contg. base polymer with protective group)

L37 ANSWER 6 OF 19 HCPLUS COPYRIGHT 2002 ACS  
 1999:789820 Document No. 132:42835 Positive-working  
 photoresist composition containing hydroxystyrene copolymer.  
 Tan, Shiro; Fujinomori, Toru; Aogo, Toshiaki (Fuji Photo Film Co.,  
 Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11344808 A2  
 19991214 Heisei, 36 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1999-82407 19990325. PRIORITY: JP 1998-84164  
 19980330.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The pos.-working photoresist compn. comprises (1) a  
 copolymer selected from I-III (R1,2 = H, Me; R3 = tert-alkyl,  
 tert-cycloalkyl; X = divalent org. residue), (2) a photoacid, and

(3) a solvent.

IT 252570-50-6P

(pos.-working **photoresist** compn. contg. hydroxystyrene copolymer)

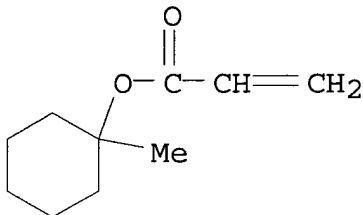
RN 252570-50-6 HCPLUS

CN 2-Propenoic acid, 1-methylcyclohexyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 178889-47-9

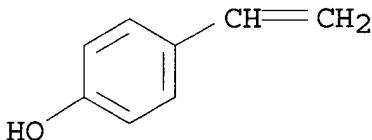
CMF C10 H16 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



IC ICM G03F007-039

ICS C08F212-04; C08F220-18; G03F007-004; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 35, 38, 76

ST **photoresist** compn hydroxystyrene copolymer

IT **Photoresists**

(pos.-working **photoresist** compn. contg. hydroxystyrene copolymer)

IT 124737-97-9 197447-16-8

(photoacid; pos.-working **photoresist** compn. contg. hydroxystyrene copolymer)

IT 159296-87-4P, tert-Butyl acrylate-p-vinylphenol copolymer

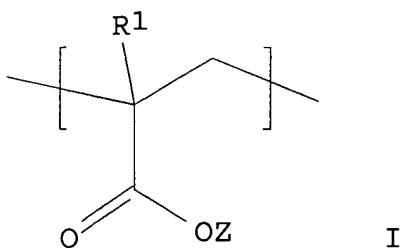
200808-68-0P 252570-50-6P 252570-51-7P 252570-52-8P

(pos.-working **photoresist** compn. contg. hydroxystyrene

copolymer)

L37 ANSWER 7 OF 19 HCAPLUS COPYRIGHT 2002 ACS  
 1997:526127 Document No. 127:191217 Heat-resistant acrylic acid ester polymers. Abe, Nobunori; Takahashi, Shinichi (Nippon Zeon Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 09202811 A2 19970805 Heisei, 6 pp. (Japanese). CODEN: JKXXAF.  
 APPLICATION: JP 1996-32815 19960126.

GI



AB Title polymers, useful for **photoresists**, etc., contain repeating units I [R1 = H, halo, Me, Et, CN; Z = ABDEFGCR<sub>2</sub>:CR<sub>3</sub>R<sub>4</sub>; R<sub>2</sub>-R<sub>4</sub> = H, halo, C<sub>1</sub>-4 (branched) alkyl, C<sub>2</sub>-5 (substituted) vinyl, C<sub>3</sub>-8 (substituted) allyl, C<sub>4</sub>-10 dienyl, C<sub>6</sub>-20 trienyl, C<sub>8</sub>-20 tetraenyl, C<sub>10</sub>-20 pentaenyl; A, B, D, E, F, G = single bond or methylene which may be substituted with halo, OH, or C<sub>1</sub>-4 alkyl]. Thus, 3-Me-2-butene-1-ol 0.51, Et<sub>3</sub>N 0.51, and methacryloyl chloride 0.51 mol were allowed to react at room temp. in CH<sub>2</sub>Cl<sub>2</sub> to give 3-methyl-2-butene-1-ol methacrylate (I), 77.1 g of which was stirred at 80.degree. in dioxane in the presence of AIBN, pptd. in MeOH, washed, and dried to give II homopolymer with Mw 24,500 and Mw/Mn 2.31. A pos. **resist** contg. 51:49 4-hydroxystyrene-II copolymer showed excellent heat resistance.

IT 194089-59-3P 194089-62-8P

(heat-resistant acrylic acid dienyloxycarbonyl ester polymers esp. suitable for **photoresists**)

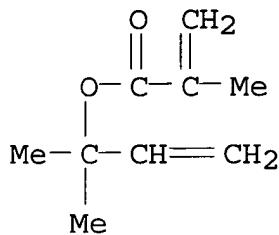
RN 194089-59-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethyl-2-propenyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

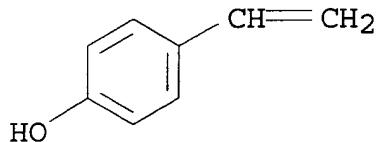
CM 1

CRN 173947-55-2

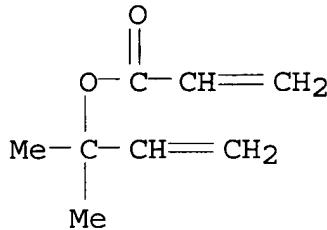
CMF C9 H14 O2



CM 2

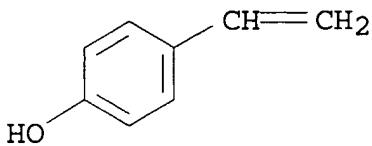
CRN 2628-17-3  
CMF C8 H8 ORN 194089-62-8 HCPLUS  
CN 2-Propenoic acid, 1,1-dimethyl-2-propenyl ester, polymer with  
4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 120880-88-8  
CMF C8 H12 O2

CM 2

CRN 2628-17-3  
CMF C8 H8 O



IC ICM C08F020-12  
ICS C08F020-22; C08F020-26; C08F020-42; G03F007-027; G03F007-038;  
C08F299-00

CC 35-4 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 74

ST dienyloxycarbonyl acrylate polymer prepn heat resistance;  
**photoresist** dienyloxycarbonyl acrylate polymer prepn;  
methylbutenyl methacrylate homopolymer prepn heat resistance;  
hydroxystyrene methylbutenyl methacrylate copolymer prepn  
**photoresist**

IT Heat-resistant materials  
**Photoresists**  
(heat-resistant acrylic acid dienyloxycarbonyl ester polymers  
esp. suitable for **photoresists**)

IT 155904-16-8P 178177-89-4P, 4-Hydroxystyrene-3-methyl-2-butenyl  
methacrylate copolymer 194089-53-7P 194089-54-8P 194089-55-9P  
194089-56-0P 194089-57-1P 194089-58-2P **194089-59-3P**  
194089-60-6P 194089-61-7P **194089-62-8P**  
(heat-resistant acrylic acid dienyloxycarbonyl ester polymers  
esp. suitable for **photoresists**)

IT 72879-37-9P 85269-36-9P 120880-88-8P 132576-26-2P  
173947-55-2P 194089-52-6P  
(heat-resistant acrylic acid dienyloxycarbonyl ester polymers  
esp. suitable for **photoresists**)

IT 115-18-4 556-82-1 814-68-6, Acryloyl chloride 920-46-7,  
Methacryloyl chloride 1569-50-2, 3-Penten-2-ol  
(heat-resistant acrylic acid dienyloxycarbonyl ester polymers  
esp. suitable for **photoresists**)

L37 ANSWER 8 OF 19 HCAPLUS COPYRIGHT 2002 ACS

1997:521957 Document No. 127:197738 **Resist** composition.

Abe, Nobunori; Takahashi, Nobukazu (Nippon Zeon Co., Ltd., Japan;  
Abe, Nobunori; Takahashi, Nobukazu). PCT Int. Appl. WO 9727515 A1  
**19970731**, 41 pp. DESIGNATED STATES: W: JP, KR, US; RW: AT,  
BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE.  
(Japanese). CODEN: PIXXD2. APPLICATION: WO 1997-JP175 19970127.  
PRIORITY: JP 1996-32814 19960126.

AB A **resist** compn. with improved sensitivity, resoln., and  
heat resistance comprises (a) a polymer with structural units having  
a group instable against acids and (b) a radiation-sensitive compd.  
capable of generating acids upon irradn. with an actinic radiation,  
wherein the polymer (a) is one prep'd. by polymg. 10 to 100 % by wt.  
of a (meth)acrylic ester (i) contg. an allyl group having .gtoreq.2  
substituents as an alc. residue with 0 to 90 % by wt. of a monomer

(ii) copolymerizable with the (meth)acrylic ester, and a method for pattern formation using the **resist** compn.

IT 194089-59-3P 194409-50-2P, 1,1-Dimethyl-2-propenyl methacrylate-styrene copolymer  
(**resist** compn.)

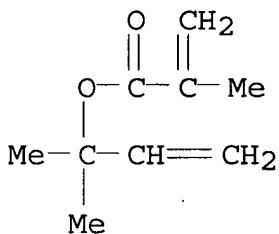
RN 194089-59-3 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethyl-2-propenyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 173947-55-2

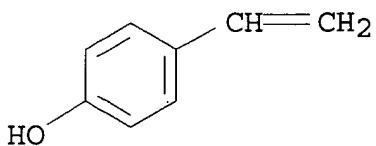
CMF C9 H14 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



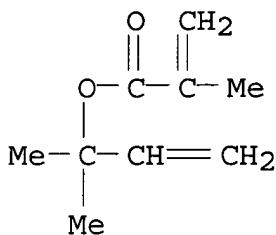
RN 194409-50-2 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1,1-dimethyl-2-propenyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

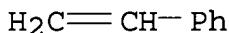
CM 1

CRN 173947-55-2

CMF C9 H14 O2



CM 2

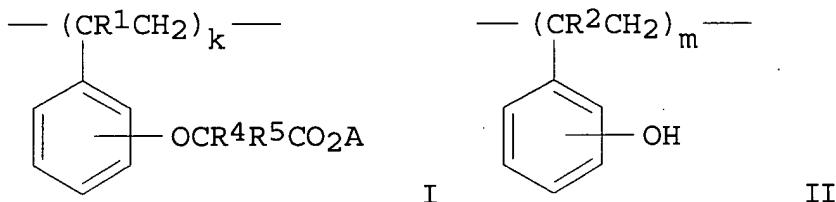
CRN 100-42-5  
CMF C8 H8

IC ICM G03F007-039  
 ICS C08L033-06; C08L025-00; C08F299-00; C09D133-04; C09D125-00  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 38, 76  
 ST polymer **resist** compn; **photoresist** polymer compn  
 IT **Photoresists**  
     (**resist** compn.)  
 IT 100-42-5, reactions 115-18-4 121-44-8, reactions 556-82-1  
 814-68-6, Acryloyl chloride 920-46-7, Methacryloyl chloride  
 1569-50-2, 3-Penten-2-ol 2628-17-3  
     (**resist** compn.)  
 IT 72879-37-9P, 3-Methyl-2-but enyl acrylate 132576-26-2P,  
 1-Methyl-2-but enyl acrylate 173947-55-2P, 1,1-Dimethyl-2-prop enyl  
 methacrylate 194089-52-6P, 1-Methyl-2-but enyl methacrylate  
     (**resist** compn.)  
 IT 194089-54-8P, Poly(1,1-dimethyl-2-prop enyl methacrylate)  
 194089-56-0P, Poly(1-methyl-2-but enyl acrylate)  
     (**resist** compn.)  
 IT 194089-59-3P 194409-50-2P, 1,1-Dimethyl-2-prop enyl  
 methacrylate-styrene copolymer 194409-51-3P, 1-Methyl-2-but enyl  
 acrylate-styrene copolymer 194409-52-4P, 1-Methyl-2-but enyl  
 methacrylate-styrene copolymer 194409-53-5P, 3-Methyl-2-but enyl  
 acrylate-styrene copolymer  
     (**resist** compn.)  
 IT 194089-60-6, 4-Hydroxystyrene-3-methyl-2-but enyl acrylate copolymer  
     (**resist** compn.)

L37 ANSWER 9 OF 19 HCPLUS COPYRIGHT 2002 ACS  
 1996:520454 Document No. 125:154399 Radiation-sensitive **resist**  
 composition containing 1-adamantyl-substituted vinylphenol  
 component. Matsuno, Shugo; Sugimoto, Tatsuya; Abe, Nobunori;

Tanaka, Hideyuki (Nippon Zeon Co, Japan). Jpn. Kokai Tokkyo Koho JP 08137107 A2 19960531 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-301558 19941110.

GI



AB The compn. contains a copolymer having an adamantly-substituted component I, a phenolic component II, and  $[CR_3(CO_2R_6)]_n$  [ $R_1-3 = H$ , (substituted) C1-4 alkyl, halo, CN, NO<sub>2</sub>, R<sub>4</sub>, R<sub>5</sub> = H, (branched) C1-8 (substituted) alkyl, (substituted) alkenyl, (substituted) aryl, A = 1-adamantyl, R<sub>6</sub> = acid-instable group; 0.05  $\leq k \leq 0.95$ ; 0.1  $\leq l \leq 0.95$ ; 0.05  $\leq n \leq 0.6$ ; k + m + n = 1] and a radiation-sensitive component which generates an acid by active radiation. The compn. showing high sensitivity, resoln., and etching resistance is useful for super-fine processing in manuf. of semiconductor devices.

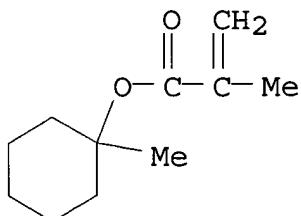
IT 178889-54-8DP, reaction products with adamantly bromoacetate (radiation-sensitive **resist** compn. contg. 1-adamantyl-substituted vinylphenol component)

RN 178889-54-8 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-methylcyclohexyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

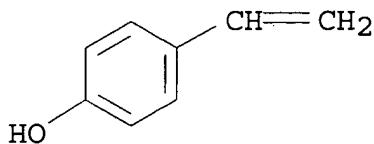
CRN 76392-14-8  
CMF C11 H18 O2



CM 2

CRN 2628-17-3

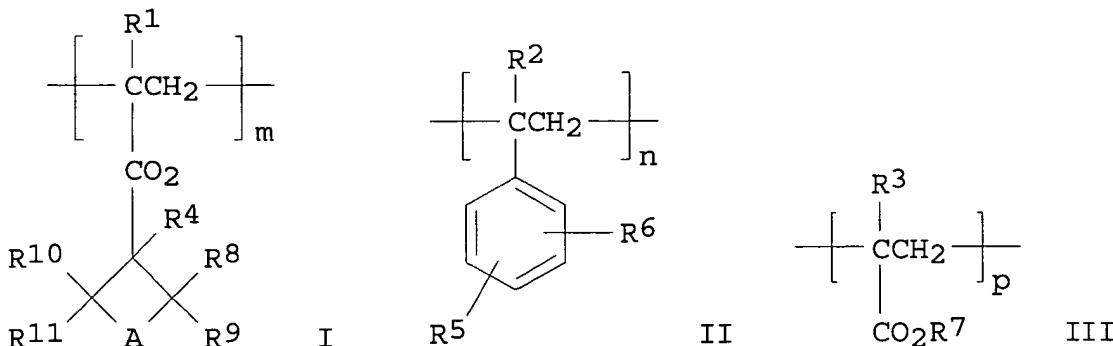
CMF C8 H8 O



IC ICM G03F007-039  
ICS G03F007-004; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
ST radiation sensitive **resist** pos working; adamantyl substituent radiation sensitive **resist**; semiconductor device fine processing **resist**  
IT **Resists**  
    (radiation-sensitive, radiation-sensitive **resist** compn.  
    contg. 1-adamantyl-substituted vinylphenol component)  
IT 155040-27-0DP, reaction products with adamantyl bromoacetate  
178177-89-4DP, 4-Hydroxystyrene-3-methyl-2-but enyl methacrylate copolymer, reaction products with adamantyl bromoacetate  
**178889-54-8DP**, reaction products with adamantyl bromoacetate  
180273-21-6DP, reaction products with hydroxy-contg. acrylic polymers  
    (radiation-sensitive **resist** compn. contg.  
    1-adamantyl-substituted vinylphenol component)

L37 ANSWER 10 OF 19 HCPLUS COPYRIGHT 2002 ACS  
1996:443720 Document No. 125:100187 Radiation-sensitive **resist** composition. Matsuno, Shugo; Abe, Nobunori; Wada, Yasumasa (Nippon Zeon Co, Japan). Jpn. Kokai Tokkyo Koho JP 08101509 A2  
**19960416** Heisei, 9 pp. (Japanese). CODEN: JKXXAF.  
APPLICATION: JP 1994-261054 19940930.

GI



AB The title **resist** compn. contains a radiation-sensitive component which generates an acid by irradn. with activated radiation and a polymer having structural units I, II, and III [R1-3 = H, C1-4 (substituted) alkyl, halo, cyano, nitro; R4 = linear, branched, or cyclic C1-8 (substituted) alkyl, (substituted) alkenyl; R5, R6 = H, halo, nitro, cyano, OH, CO<sub>2</sub>H, linear-, branched-, or cyclic C1-8 (substituted) alkyl, linear-, branched-, or cyclic C1-8 (substituted) alkoxy, C6-12 (substituted) aryl, C7-14 (substituted) aralkyl; R7 = linear-, branched-, or cyclic C1-8 (substituted) alkyl, linear-, branched-, or cyclic C1-8 (substituted) alkenyl; R8-11 = H, halo, C1-4 (substituted) alkyl; .gtoreq.1 of R8-11 is H; A = single bond, divalent org. group which may be substituted; m + n + p = 1, 0 < m .ltoeq. 1, 0 .ltoeq. n < 1, 0 .ltoeq. p < 1]. The **resist** is applicable for patterning of semiconductor devices. A **resist** comprising poly(1-methylcyclohexyl methacrylate) and Ph<sub>3</sub>S<sup>+</sup>.CF<sub>3</sub>SO<sub>3</sub><sup>-</sup> showed high sensitivity and gave a submicron pos. pattern by using excimer laser.

IT 178889-48-0P 178889-50-4P 178889-54-8P  
(radiation-sensitive **resist** compn.)

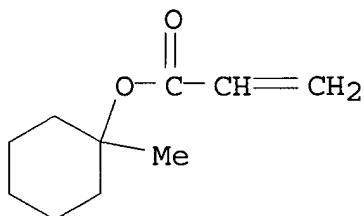
RN 178889-48-0 HCPLUS

CN 2-Propenoic acid, 1-methylcyclohexyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 178889-47-9

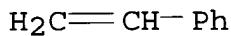
CMF C10 H16 O2



CM 2

CRN 100-42-5

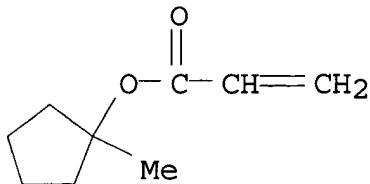
CMF C8 H8



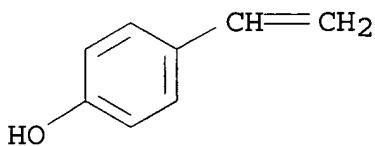
RN 178889-50-4 HCPLUS

CN 2-Propenoic acid, 1-methylcyclopentyl ester, polymer with 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 178889-49-1  
CMF C9 H14 O2

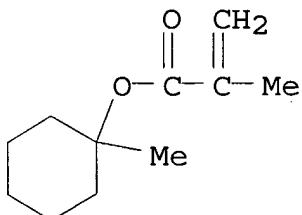
CM 2

CRN 2628-17-3  
CMF C8 H8 O

RN 178889-54-8 HCAPLUS

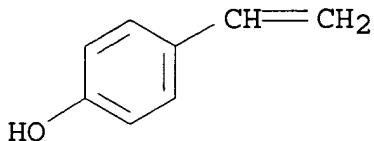
CN 2-Propenoic acid, 2-methyl-, 1-methylcyclohexyl ester, polymer with  
4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 76392-14-8  
CMF C11 H18 O2

CM 2

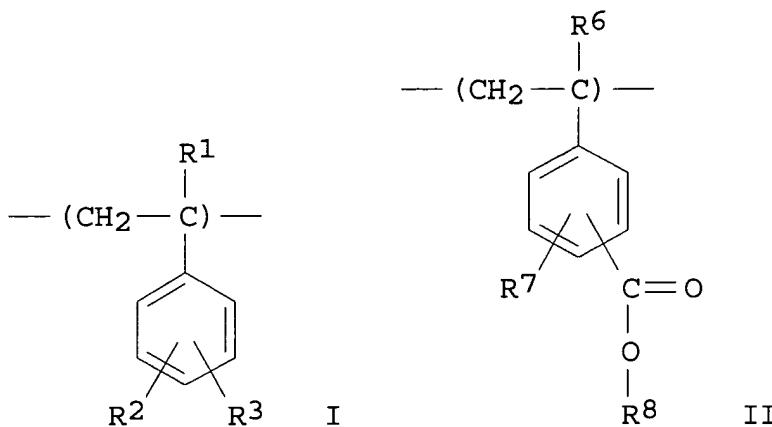
CRN 2628-17-3  
CMF C8 H8 O



IC ICM G03F007-039  
ICS G03F007-004; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 76  
ST radiation sensitive **resist** compn; cycloalkyl arylate polymer **resist**; acid generating compd **resist**; semiconductor device **resist** radiation sensitive  
IT Semiconductor devices  
(patterning; radiation-sensitive **resist** compn. for)  
IT **Resists**  
(radiation-sensitive **resist** compn.)  
IT 66003-78-9, Triphenylsulfonium triflate  
(acid generator; radiation-sensitive **resist** compn.)  
IT 120763-30-6P, 1-Methylcyclohexyl methacrylate homopolymer  
178889-46-8P **178889-48-0P** **178889-50-4P**  
178889-51-5P 178889-52-6P 178889-53-7P **178889-54-8P**  
(radiation-sensitive **resist** compn.)

L37 ANSWER 11 OF 19 HCPLUS COPYRIGHT 2002 ACS  
1995:801746 Document No. 124:160397 **Resist** compositions with excellent sensitivity, resolution, etching-resistance, and storage-stability and **resist** pattern formation. Oie, Masayuki; Abe, Nobunori; Tanaka, Hideyuki; Oikawa, Akira; Myata, Shuichi (Nippon Zeon Co, Japan; Fujitsu Ltd). Jpn. Kokai Tokkyo Koho JP 07181680 A2 **19950721** Heisei, 28 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-303235 19941111. PRIORITY: JP 1993-305935 19931111.

GI



AB The title compns. comprise photo-acid generators, polymers capable of becoming alkali-sol. upon reacting with the photo-acids, and phenolic compds. The polymers contain structural repeating units, I [R<sub>1</sub>, R<sub>2</sub> = H, halo, CN, C<sub>1-5</sub> alkyl; R<sub>3</sub> = acetal, carbonate, OR<sub>9</sub>; R<sub>9</sub> = CR<sub>10</sub>R<sub>11</sub>R<sub>12</sub>, CR<sub>13</sub>R<sub>14</sub>OR<sub>15</sub>; R<sub>10-15</sub> = alkyl, alkenyl, aryl, aralkyl], CH:CR<sub>4</sub>(CO<sub>2</sub>R<sub>5</sub>) [R<sub>4</sub> = H, halo, CN, C<sub>1-5</sub> alkyl; R<sub>5</sub> = CR<sub>10</sub>R<sub>11</sub>R<sub>12</sub>, CR<sub>13</sub>R<sub>14</sub>OR<sub>15</sub>; R<sub>10-15</sub> = alkyl, alkenyl, aryl, aralkyl], and/or II [R<sub>6</sub>, R<sub>7</sub> = H, halo, CN, C<sub>1-5</sub> alkyl; R<sub>8</sub> = CR<sub>10</sub>R<sub>11</sub>R<sub>12</sub>, CR<sub>13</sub>R<sub>14</sub>OR<sub>15</sub>; R<sub>10-15</sub> = alkyl, alkenyl, aryl, aralkyl].

IT 166747-33-7

(resist compns. comprising)

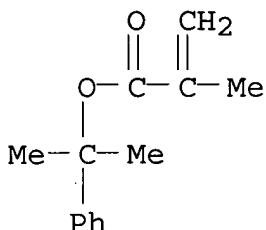
RN 166747-33-7 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-methyl-1-phenylethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 54554-17-5

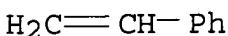
CMF C<sub>13</sub> H<sub>16</sub> O<sub>2</sub>



CM 2

CRN 100-42-5

CMF C<sub>8</sub> H<sub>8</sub>

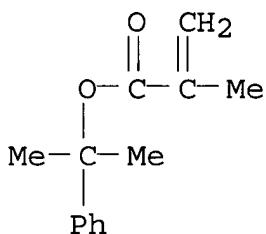


IC ICM G03F007-039  
 ICS G03F007-004; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 76  
 ST photoresist compn resist patterning  
 IT Electric circuits  
     (integrated, resist compns. with excellent sensitivity,  
     resoln., etching-resistance, and storage-stability and  
     resist pattern formation)  
 IT Lithography  
     (photo-, UV, submicron, resist compns. with excellent  
     sensitivity, resoln., etching-resistance, and storage-stability  
     and resist pattern formation)  
 IT Resists  
     (photo-, pos.-working, resist compns. with excellent  
     sensitivity, resoln., etching-resistance, and storage-stability  
     and resist pattern formation)  
 IT 28549-51-1 113924-01-9 123589-22-0 155040-27-0  
**166747-33-7** 167953-83-5  
     (resist compns. comprising)  
 IT 51-28-5, 2,4-Dinitrophenol, uses 80-05-7, Bisphenol A, uses  
 80-09-1, Bisphenol S 87-66-1, Pyrogallol 108-73-6,  
 Phloroglucinol 1470-79-7, 2,4,4'-Trihydroxybenzophenone  
 26983-52-8, Dihydroxybiphenyl 31127-54-5, 2,3,4,4'-  
 Tetrahydroxybenzophenone 110726-28-8, Trisphenol PA 173718-27-9,  
 Trisphenol HAP 173718-28-0, Trisphenol TC  
     (resist compns. comprising)  
 L37 ANSWER 12 OF 19 HCPLUS COPYRIGHT 2002 ACS  
 1995:620074 Document No. 124:131526 Positively working resist  
 composition containing carboxamide compound. Oie, Masayuki; Tanaka,  
 Hideyuki; Abe, Nobunori; Misawa, Mari (Nippon Zeon Co, Japan). Jpn.  
 Kokai Tokkyo Koho JP 07092681 A2 **19950407** Heisei, 23 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-312672 19931118.  
 PRIORITY: JP 1993-185472 19930629.  
 AB The compn. contains (A) an acid-generating compd. by active  
 beam-irradn., (B) a polymer having a structure unit with an  
 acid-unstable group to cleave and be alkali-sol. in the presence of  
 an acid from A, and (C) a carboxamide compd., optionally contg. (D)  
 an alkali-sol. phenolic resin. The compn. is useful for fine  
 processing in manuf. of semiconductor devices. The compn. showed  
 high sensitivity and gave high-resoln. images with etching  
 resistance and storage stability.  
 IT **166747-33-7**  
     (pos.-working resist compn. contg. carboxamide compd.  
     for manuf. of semiconductor device)

RN 166747-33-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-methyl-1-phenylethyl ester, polymer  
 with ethenylbenzene (9CI) (CA INDEX NAME)

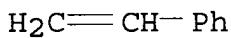
CM 1

CRN 54554-17-5  
 CMF C13 H16 O2



CM 2

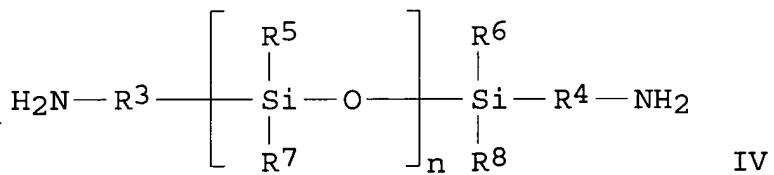
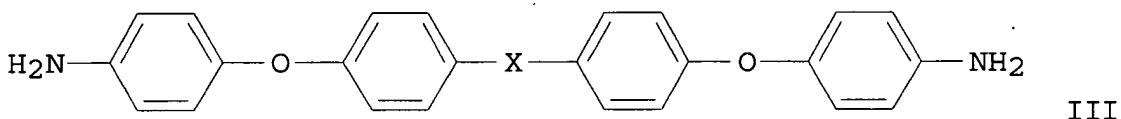
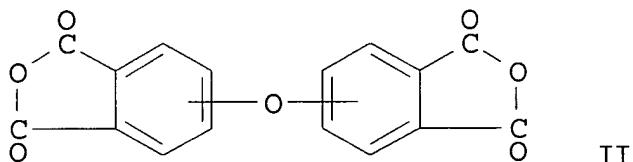
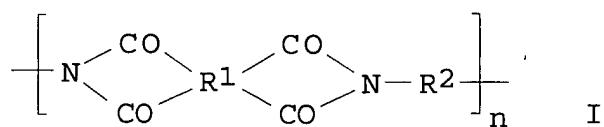
CRN 100-42-5  
 CMF C8 H8



IC ICM G03F007-039  
 ICS G03F007-004; G03F007-023; G03F007-028; G03F007-033; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 76  
 ST pos working **photoresist** carboxamide; semiconductor device  
 pos working **resist**  
 IT Electric circuits  
 (integrated, pos.-working **resist** compn. contg.  
 carboxamide compd. for manuf. of semiconductor device)  
 IT **Resists**  
 (photo-, pos.-working **resist** compn. contg. carboxamide  
 compd. for manuf. of semiconductor device)  
 IT 66003-78-9, Triphenylsulfonium triflate 130290-80-1  
 (photoacid generator; pos.-working **resist** compn. contg.  
 carboxamide compd. for manuf. of semiconductor device)  
 IT 55-21-0, Benzamide 93-98-1, Benzanilide 613-93-4 620-71-3,  
 Propionanilide 1129-50-6 15473-32-2, Capric acid anilide  
 19026-84-7 28549-51-1 28602-31-5, Toluamide 29733-85-5  
 41911-58-4, Hydroxybenzamide 84631-37-8 113924-01-9  
 123589-22-0 **166747-33-7** 169479-58-7 169479-59-8  
 (pos.-working **resist** compn. contg. carboxamide compd.  
 for manuf. of semiconductor device)

L37 ANSWER 13 OF 19 HCPLUS COPYRIGHT 2002 ACS  
 1995:620073 Document No. 123:354646 Positively working **resist**  
 composition containing sulfonamide compound. Oie, Masayuki; Tanaka,  
 Hideyuki; Abe, Nobunori; Misawa, Mari (Nippon Zeon Co, Japan). Jpn.  
 Kokai Tokkyo Koho JP 07092680 A2 19950407 Heisei, 23 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-312671 19931118.  
 PRIORITY: JP 1993-185471 19930629.

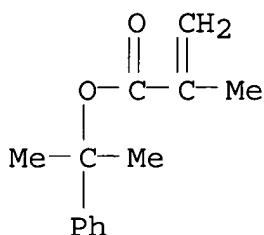
GI



AB The compn. contains (A) an acid-generating compd. by active beam-irradn., (B) a polymer having a structure unit with an acid-unstable group to cleave and be alkali-sol. in the presence of an acid from A, and (C) a sulfonamide compd., optionally contg. (D) an alkali-sol. phenolic resin. B may have a structure unit selected from  $\text{CH}_2\text{C}(\text{CO}_2\text{R}^5)\text{R}^4$ , I, or II [ $\text{R}^{1-2}, \text{R}^4, \text{R}^{6-7} = \text{H, halo, CN, C1-5}$  (substituted) alkyl;  $\text{R}^3 = (\text{cyclic}) \text{ acetal, carbonate, OR}^9$ ;  $\text{R}^5, \text{R}^{8-9} = \text{CR}^{10}\text{R}^{11}\text{R}^{12}$ ,  $\text{C}(\text{OR}^{15})\text{R}^{13}\text{R}^{14}$ ;  $\text{R}^{10-15} = (\text{substituted}) (\text{branched}) \text{ alkyl, (cyclic) (substituted) alkyl, (substituted) alkenyl, (substituted) aryl, (substituted) aralkyl; R}^{13} \text{ and R}^{14} \text{ may be H}]$ . The compn. is useful for fine processing in manuf. of semiconductor devices. The compn. showed high sensitivity and gave high-resoln.

IT images with etching resistance and storage stability.  
**166747-33-7**  
 (pos.-working **resist** compn. contg. sulfonamide compd.  
 for manuf. of semiconductor device)  
 RN 166747-33-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-methyl-1-phenylethyl ester, polymer  
 with ethenylbenzene (9CI) (CA INDEX NAME)

CM 1

CRN 54554-17-5  
CMF C13 H16 O2

CM 2

CRN 100-42-5  
CMF C8 H8 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$ 

IC ICM G03F007-039  
 ICS G03F007-004; G03F007-023; G03F007-028; G03F007-033; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 76  
 ST pos working **photoresist** sulfonamide; semiconductor device  
 pos working **resist**  
 IT Electric circuits  
 (integrated, pos.-working **resist** compn. contg.  
 sulfonamide compd. for manuf. of semiconductor device)  
 IT **Resists**  
 (photo-, pos.-working **resist** compn. contg. sulfonamide  
 compd. for manuf. of semiconductor device)  
 IT 66003-78-9, Triphenylsulfonium triflate 130290-80-1  
 (photoacid generator; pos.-working **resist** compn. contg.  
 sulfonamide compd. for manuf. of semiconductor device)  
 IT 68-34-8 70-55-3, 4-Methylbenzenesulfonamide 98-10-2,  
 Benzenesulfonamide 98-64-6, 4-Chlorobenzenesulfonamide 456-64-4,  
 Trifluoromethanesulfonanilide 4284-51-9 5455-59-4,

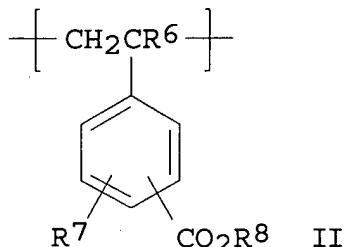
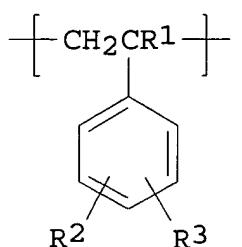
2-Nitrobenzenesulfonamide 7454-47-9 28549-51-1 53715-52-9  
 60901-27-1 82407-05-4 113924-01-9 123589-22-0  
**166747-33-7**

(pos.-working **resist** compn. contg. sulfonamide compd.  
 for manuf. of semiconductor device)

L37 ANSWER 14 OF 19 HCAPLUS COPYRIGHT 2002 ACS

1995:620072 Document No. 123:156435 Positively working **resist**  
 composition containing carboxylic acid compound. Oie, Masayuki;  
 Tanaka, Hideyuki; Abe, Nobunori; Misawa, Mari (Nippon Zeon Co,  
 Japan). Jpn. Kokai Tokkyo Koho JP 07092679 A2 **19950407**  
 Heisei, 23 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
 1993-312670 19931118. PRIORITY: JP 1993-185470 19930629.

GI



AB The compn. contains (A) an acid-generating compd. by active beam-irradn., (B) a polymer having a structure unit with an acid-unstable group to cleave and be alkali-sol. in the presence of an acid from A, and (C) a carboxylic acid compd., optionally contg. (D) an alkali-sol. phenolic resin. B may have a structure unit selected from  $\text{CH}_2\text{C}(\text{CO}_2\text{R}^5)\text{R}^4$ , I, or II [R1-2, R4, R6-7 = H, halo, CN, C1-5 (substituted) alkyl; R3 = (cyclic) acetal, carbonate, OR9; R5, R8-9 = CR10R11R12, C(OR15)R13R14; R10-15 = (substituted) (branched) alkyl, (cyclic) (substituted) alkyl, (substituted) alkenyl, (substituted) aryl, (substituted) aralkyl; R13 and R14 may be H]. The compn. is useful for fine processing in manuf. of semiconductor devices. The compn. showed high sensitivity and gave high-resoln. images with etching resistance and storage stability.

IT **166747-33-7**

(pos.-working **resist** compn. contg. carboxylic acid compd. form manuf. of semiconductor device)

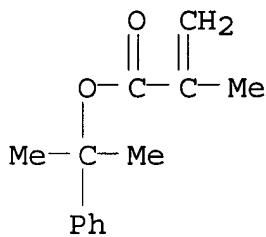
RN 166747-33-7 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-methyl-1-phenylethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

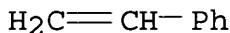
CM 1

CRN 54554-17-5

CMF C13 H16 O2



CM 2

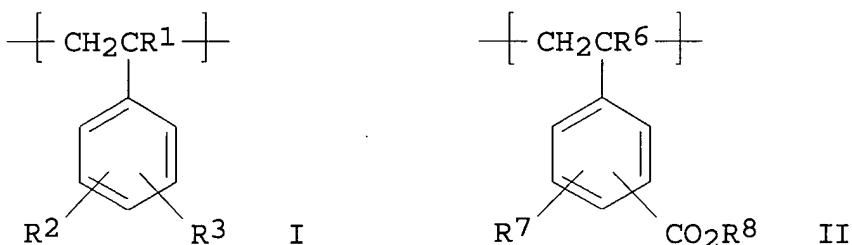
CRN 100-42-5  
CMF C8 H8

IC ICM G03F007-039  
 ICS G03F007-004; G03F007-023; G03F007-028; G03F007-033; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 Section cross-reference(s): 76  
 ST pos working **resist** photo carboxylic acid; semiconductor  
 device pos working **resist**  
 IT Electric circuits  
 (integrated, pos.-working **resist** compn. contg.  
 carboxylic acid compd. form manuf. of semiconductor device)  
 IT **Resists**  
 (photo-, pos.-working **resist** compn. contg. carboxylic  
 acid compd. form manuf. of semiconductor device)  
 IT 66003-78-9, Triphenylsulfonium triflate 130290-80-1  
 (photoacid generator; pos.-working **resist** compn. contg.  
 carboxylic acid compd. form manuf. of semiconductor device)  
 IT 65-85-0, Benzoic acid, uses 76-05-1, uses 85-44-9,  
 1,3-Isobenzofurandione 100-09-4 108-30-5, Succinic anhydride,  
 uses 110-94-1, Pentanedioic acid 144-62-7, Ethanedioic acid,  
 uses 372-09-8, Cyanoacetic acid 482-05-3, [1,1'-Biphenyl]-2,2'-  
 dicarboxylic acid 516-05-2, Methylmalonic acid 1007-01-8,  
 Bicyclo[2.2.1]heptane-2-acetic acid 2170-03-8, Itaconic anhydride  
 25567-10-6, Toluic acid 28549-51-1 42862-36-2,  
 Adamantanecarboxylic acid 113924-01-9 123589-22-0  
**166747-33-7**  
 (pos.-working **resist** compn. contg. carboxylic acid  
 compd. form manuf. of semiconductor device)

L37 ANSWER 15 OF 19 HCPLUS COPYRIGHT 2002 ACS  
 1995:620071 Document No. 124:41401 Positively working **resist**  
 composition containing amino compound. Oie, Masayuki; Tanaka,  
 Hideyuki; Abe, Nobunori; Misawa, Mari (Nippon Zeon Co, Japan). Jpn.

Kokai Tokkyo Koho JP 07092678 A2 **19950407** Heisei, 23 pp.  
 (Japanese). CODEN: JKXXAF. APPLICATION: JP 1993-312669 19931118.  
 PRIORITY: JP 1993-185469 19930629.

GI



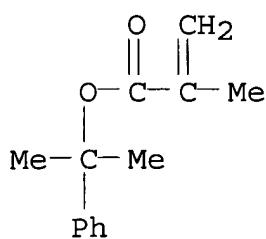
**AB** The compn. contains (A) an acid-generating compd. by active beam-irradn., (B) a polymer having a structure unit with an acid-unstable group to cleave and be alkali-sol. in the presence of an acid from A, and (C) an amino compd., optionally contg. (D) an alkali-sol. phenolic resin. B may have a structure unit selected from  $\text{CH}_2\text{C}(\text{CO}_2\text{R}_5)\text{R}_4$ , I, or II [ $\text{R}_{1-2}, \text{R}_4, \text{R}_{6-7} = \text{H, halo, CN, C1-5}$  (substituted) alkyl;  $\text{R}_3 = (\text{cyclic}) \text{ acetal, carbonate, OR}_9$ ;  $\text{R}_5, \text{R}_{8-9} = \text{CR}_{10}\text{R}_{11}\text{R}_{12}$ ,  $\text{C}(\text{OR}_{15})\text{R}_{13}\text{R}_{14}$ ;  $\text{R}_{10-15} = (\text{substituted}) (\text{branched})$  alkyl, (cyclic) (substituted) alkyl, (substituted) alkenyl, (substituted) aryl, (substituted) aralkyl;  $\text{R}_{13}$  and  $\text{R}_{14}$  may be H]. The compn. is useful for fine processing in manuf. of semiconductor devices. The compn. showed high sensitivity and gave high-resoln. images with etching resistance and storage stability.

**IT** 166747-33-7(pos.-working **resist** compn. contg. amino compd. for manuf. of semiconductor device)**RN** 166747-33-7 HCPLUS**CN** 2-Propenoic acid, 2-methyl-, 1-methyl-1-phenylethyl ester, polymer with ethenylbenzene (9CI) (CA INDEX NAME)

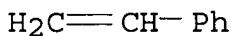
CM 1

CRN 54554-17-5

CMF C13 H16 O2



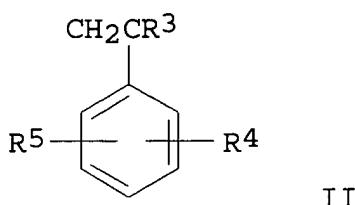
CM 2

CRN 100-42-5  
CMF C8 H8

IC ICM G03F007-039  
ICS G03F007-004; G03F007-023; G03F007-028; G03F007-033; H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
Section cross-reference(s): 76  
ST pos working **resist** photo amino; semiconductor device pos  
working **resist**  
IT Electric circuits  
(integrated, pos.-working **resist** compn. contg. amino  
compd. for manuf. of semiconductor device)  
IT **Resists**  
(photo-, pos.-working **resist** compn. contg. amino compd.  
for manuf. of semiconductor device)  
IT 66003-78-9, Triphenylsulfonium triflate 130290-80-1  
(photoacid generator; pos.-working **resist** compn. contg.  
amino compd. for manuf. of semiconductor device)  
IT 62-53-3, Benzenamine, uses 100-46-9, Benzylamine, uses 111-26-2,  
1-Hexanamine 124-09-4, 1,6-Hexanediamine, uses 136-95-8,  
2-Benzothiazolamine 142-84-7 143-27-1, Cetylamine 373-44-4,  
1,8-Octanediamine 26915-12-8, Toluidine 27134-26-5,  
Chloroaniline 28549-51-1 29385-37-3, Aminothiazole 57951-36-7,  
Dimethylaminopyridine 113924-01-9 123589-22-0  
**166747-33-7**  
(pos.-working **resist** compn. contg. amino compd. for  
manuf. of semiconductor device)

L37 ANSWER 16 OF 19 HCPLUS COPYRIGHT 2002 ACS  
1995:339558 Document No. 122:174456 **Resist** compositions.  
Oie, Masayuki; Abe, Nobunori; Tanaka, Hideyuki (Nippon Zeon Co,  
Japan). Jpn. Kokai Tokkyo Koho JP 06289608 A2 **19941018**  
Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP  
1993-97139 19930330.

GI



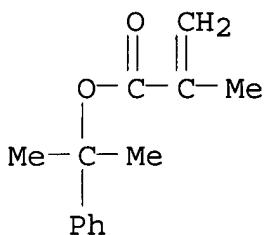
AB The title **resist** compns. contain a copolymer having repeating units  $\text{CH}_2\text{CR}_1\text{CO}_2\text{R}_2$  [I;  $\text{R}_1 = \text{H}$ , (substituted) C1-5 alkyl, halo, CN;  $\text{R}_2 = \text{org. group having tert-C atom linking to the O}$ ] and II [ $\text{R}_3 = \text{H}$ , (substituted) C1-5 alkyl, halo, CN;  $\text{R}_4, \text{R}_5 = \text{H}, \text{OH}$ , halo,  $\text{CO}_2\text{H}$ , (substituted) C1-5 alkyl, (substituted) C1-12 alkoxy, (substituted) C6-12 aryl, (substituted) C7-14 aralkyl] and a compd. which can form an acid by active ray irradn. A **resist** comprising tert-Bu methacrylate-styrene copolymer and 1,2-naphthoquinonediazido-4-sulfonic acid ester of bisphenol A showed high photosensitivity and good storage stability and gave high resln. patterns with good profile and etching resistance.

IT 91227-16-6  
(**resist** compn. contg. acrylate-styrene copolymer and acid-generating compd.)

RN 91227-16-6 HCAPLUS

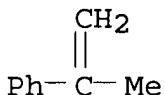
CN 2-Propenoic acid, 2-methyl-, 1-methyl-1-phenylethyl ester, polymer with (1-methylethenyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 54554-17-5  
CMF C13 H16 O2

CM 2

CRN 98-83-9  
CMF C9 H10



IC ICM G03F007-023  
   ICS G03F007-028; G03F007-033; G03F007-039; H01L021-027

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST acid generating compd **resist**; acrylate styrene copolymer  
**resist**

IT **Resists**  
   (radiation-sensitive, **resist** compn. contg.  
   acrylate-styrene copolymer and acid-generating compd.)

IT 79-94-7, Tetrabromobisphenol A 640-60-8, Phenyl p-toluenesulfonate  
 66003-78-9, Triphenylsulfonium triflate 135668-83-6 136958-90-2  
 145538-13-2 161445-13-2 161445-14-3  
   (**resist** compn. contg. acrylate-styrene copolymer and  
   acid-generating compd.)

IT 26702-86-3, tert-Butyl methacrylate-styrene copolymer 27812-47-1,  
 tert-Butyl acrylate-styrene copolymer 91227-16-6  
 155040-27-0 161234-12-4 161406-76-4  
   (**resist** compn. contg. acrylate-styrene copolymer and  
   acid-generating compd.)

L37 ANSWER 17 OF 19 HCPLUS COPYRIGHT 2002 ACS

1990:45458 Document No. 112:45458 Copolymer approach to design of sensitive deep-UV **resist** systems with high thermal stability and dry etch resistance. Ito, Hiroshi; Ueda, Mitsuru; Ebina, Mayumi (Almaden Res. Center, IBM Res. Div., San Jose, CA, 95120-6099, USA). ACS Symposium Series, 412(Polym. Microlithogr.), 57-73 (English) 1989. CODEN: ACSMC8. ISSN: 0097-6156.

AB A sensitive deep UV **resist** was designed by copolymerg.  
 .alpha.,.alpha.-dimethylbenzyl methacrylate with  
 .alpha.-methylstryrene by radical initiation. The electron-rich  
 .alpha.-methylstyrene lacks self-propagation and tends to undergo alternating copolymn. with electron-poor monomers such as methacrylates, esp. at high feed ratios. Intramol. anhydride formation that occurs upon heating of certain polymethacrylates and poly(methacrylic acid) is suppressed in such alternating copolymers. Thus, a high glass transition temp. of 210.degree. is obsd. for the 1:1 copolymer after deesterification. When mixed with an onium salt photochem. acid generator, the dimethylbenzyl ester moiety provides a high **resist** sensitivity and acid-catalyzed polarity changes. The methacrylate units incorporated in the polymer chain give excellent UV transmission, whereas the .alpha.-methylstyrene units provide good dry etch resistance and high thermal stability.

IT 91227-16-6, .alpha.,.alpha.-Dimethylbenzyl methacrylate-.alpha.-methylstryrene polymer  
   (for deep-UV **resist** systems with high thermal stability and dry etch resistance)

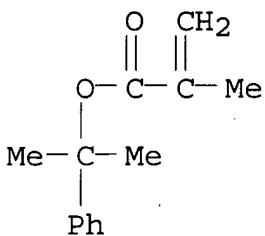
RN 91227-16-6 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-methyl-1-phenylethyl ester, polymer  
with (1-methylethenyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 54554-17-5

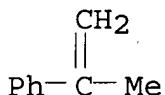
CMF C13 H16 O2



CM 2

CRN 98-83-9

CMF C9 H10

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)

Section cross-reference(s): 35

ST deep UV **resist** polymerIT **Resists**(photo-, deep-UV, copolymer use in high thermal stability and dry  
etch resistance)IT 57840-38-7, Triphenylsulfonium hexafluoroantimonate  
(deep-UV **photoresist** system contg. dimethylbenzyl  
methacrylate-methylstyrene polymer and, with high thermal  
stability and dry etch resistance)IT 91227-16-6, .alpha.,.alpha.-Dimethylbenzyl  
methacrylate-.alpha.-methylstyrene polymer  
(for deep-UV **resist** systems with high thermal stability  
and dry etch resistance)

L37 ANSWER 18 OF 19 HCPLUS COPYRIGHT 2002 ACS

1989:415209 Document No. 111:15209 A copolymer approach to the design  
of sensitive deep UV **resist** systems with high thermal  
stability and dry etch resistance. Ito, Hiroshi; Ueda, Mitsuru;  
Ebina, Mayumi (Almaden Res. Cent., IBM Res. Div., San Jose, CA,

95120-6099, USA). Polymeric Materials Science and Engineering, 60, 142-6 (English) 1989. CODEN: PMSEDG. ISSN: 0743-0515.

AB Sensitive deep UV **resist** was prep'd. by copolymerization of  $\alpha,\alpha$ -dimethylbenzyl methacrylate (I) with  $\alpha$ -methylstyrene (II). The **resist** is so designed that each component carries its own functions. The methacrylate unit in the polymer chain provides good UV transmission to allow the triphenylsulfonium chromophore to absorb the deep UV light. The  $\alpha,\alpha$ -dimethylbenzyl ester moiety provides facile acidolysis and therefore a high sensitivity as well as a polarity change for the dual tone imaging. The II unit in the polymer chain offers dry etch durability and high thermal stability in conjunction with the alternating nature. The sulfonium salt generates a strong Broensted acid upon irradn. with the sulfonium cation absorbing the deep UV light and with the gegen anion detg. acid strength thereby contributing to the **resist** sensitivity. If a higher UV transmission is desired, alkyl methacrylates such as tert-Bu methacrylate could be incorporated in the place of I at the expense of sensitivity.

IT 91227-16-6

(deep-UV **resist** system based on, with high thermal stability and dry etch resistance)

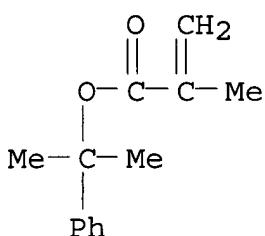
RN 91227-16-6 HCAPLUS

CN 2-Propenoic acid, 2-methyl-, 1-methyl-1-phenylethyl ester, polymer with (1-methylethenyl)benzene (9CI) (CA INDEX NAME)

CM 1

CRN 54554-17-5

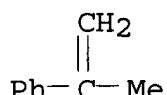
CMF C13 H16 O2



CM 2

CRN 98-83-9

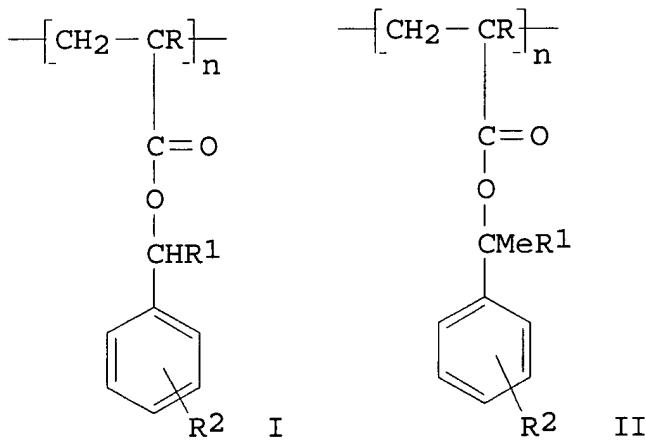
CMF C9 H10



CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
Other Reprographic Processes)  
ST deep UV **resist** polymer system; **photoresist** deep  
UV thermal stability; dry etch resistant deep UV **resist**  
IT **Resists**  
    (photo-, deep-UV, dimethylbenzyl methacrylate-methylstyrene  
    polymer as)  
IT 91227-16-6  
    (deep-UV **resist** system based on, with high thermal  
    stability and dry etch resistance)

L37 ANSWER 19 OF 19 HCPLUS COPYRIGHT 2002 ACS  
1984:520487 Document No. 101:120487 Radiation-sensitive  
resists. (Hitachi, Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
58068743 A2 19830423 Showa, 9 pp. (Japanese). CODEN:  
JKXXAF. APPLICATION: JP 1981-167173 19811021.

GI



AB Electron-beam-, x-ray-, ion-beam-sensitive pos.-type **resists** are based on an org. polymer I [R = Me, Et, Pr, Ph; R1 = H, alkyl, aryl, aralkyl; R2 = H, alkyl, aryl, aralkyl, halo] or II [R = Me, Et, Pr, Ph; R1 = alkyl, aryl, alkyl; R2 = H, alkyl, aryl, aralkyl, halo, n = d.p.] capable of forming CO<sub>2</sub>H groups on irradn. with high energy radiation. The **resists** are useful in semiconductor devices, magnetic bubble memory devices, integrated circuit fabrication, etc. requiring fine pattern formation.

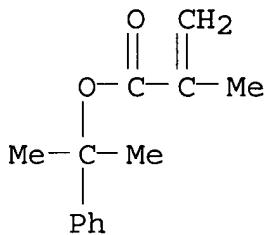
IT 91227-16-6  
(radiation **resists** from, for semiconductor device  
manuf.)

RN 91227-16-6 HCAPLUS  
CN 2-Propenoic acid, 2-methyl-, 1-methyl-1-phenylethyl ester, polymer

with (1-methylethenyl)benzene (9CI) (CA INDEX NAME)

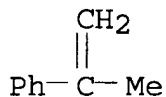
CM 1

CRN 54554-17-5  
CMF C13 H16 O2



CM 2

CRN 98-83-9  
CMF C9 H10



IC G03C001-72; C08F020-10  
 ICA C08F020-22  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
     Other Reprographic Processes)  
     Section cross-reference(s): 76, 77  
 ST **resist** radiation semiconductor device  
 IT Semiconductor devices  
     (fabrication of, radiation **resists** for, from  
         benzylstyrenecarboxylate polymers)  
 IT **Resists**  
     (radiation, pos.-type, contg. benzylstyrenecarboxylate polymers)  
 IT 25085-84-1 55993-86-7 **91227-16-6** 91227-17-7  
     91227-18-8  
     (radiation **resists** from, for semiconductor device  
         manuf.)

=> d 138 1-6 cbib abs hitstr hitind

L38 ANSWER 1 OF 6 HCPLUS COPYRIGHT 2002 ACS  
 2000:877009 Document No. 134:63886 Krypton fluoride excimer  
     laser-sensitive positive-working **resist** composition.  
     Omori, Katsumi; Yukawa, Hirohito; Yamazaki, Akiyoshi; Tani, Kazuo;

Kinoshita, Yohei; Yamada, Tomotaka (Tokyo Ohka Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000347405 A2 **20001215**, 6 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1999-154908 19990602.

AB The title compn. contains a styrene/acrylate copolymer and a photoacid generator, wherein the copolymer is prep'd. from: (A) hydroxystyrene or hydroxy-.alpha.-Me styrene; (B) styrene; and (C) an acrylate of a cyclohexyl deriv. The compn. provides the large difference of the alkali solv. before and after the exposure.

IT **313644-15-4P**, Hydroxystyrene-styrene-1-Ethylcyclohexyl methacrylate copolymer  
(copolymer in excimer laser-sensitive pos.-working resist compn.)

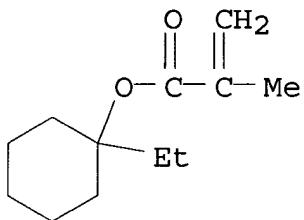
RN 313644-15-4 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclohexyl ester, polymer with ethenylbenzene and ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 274248-09-8

CMF C12 H20 O2

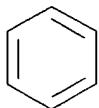


CM 2

CRN 31257-96-2

CMF C8 H8 O

CCI IDS



D1-OH

D1-CH=CH<sub>2</sub>

CM 3

CRN 100-42-5  
CMF C8 H8H<sub>2</sub>C=CH-Ph

IC ICM G03F007-039  
ICS H01L021-027  
CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
Section cross-reference(s): 35  
ST excimer laser sensitive pos **resist** compn  
IT Light-sensitive materials  
**Photoresists**  
(krypton fluoride excimer laser-sensitive pos.-working  
**resist** compn.)  
IT **313644-15-4P**, Hydroxystyrene-styrene-1-Ethylcyclohexyl  
methacrylate copolymer  
(copolymer in excimer laser-sensitive pos.-working **resist**  
compn.)  
IT 66003-76-7, Diphenyliodonium trifluoromethanesulfonate 194999-82-1  
(photoacid generator in excimer laser-sensitive pos.-working  
**resist** compn.)

L38 ANSWER 2 OF 6 HCPLUS COPYRIGHT 2002 ACS  
2000:600540 Document No. 133:215450 Positive-working photosensitive  
composition containing silicone. Sakaguchi, Shinji (Fuji Photo Film  
Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2000235264 A2  
**20000829**, 49 pp. (Japanese). CODEN: JKXXAF. APPLICATION:  
JP 1999-143614 19990524. PRIORITY: JP 1998-354878 19981214.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB The invention relates to a pos.-working photosensitive compn. contg.; (a) a water-insol. and alkali-sol. polymer having repeating unit I or II( X = -C=O, H, hydrocarbon, etc.; R'-'-----' = OH, alkyl, cycloaralkyl, etc.; R0 = H, halo, hydrocarbon; r, s, t = 1-3 integer; u, v = 1, 2; l, m, n, q .gtoreq.0 integer; p>0 integer; R.alpha.-.gamma. = single bond, -(CH2)<sub>k</sub>-(Z.alpha.)-R.delta.; Z.alpha. = -COC-, -O-, -N(R.epsilon.)-; R.delta. = single bond, C1-12 alkylene; arylene, aralkyl; R.epsilon. = H, C1-10 alkyl; k = .gtoreq.0 integer; j = 0, 1); (b) a compd. generating an acid upon irradn. of actinic or radioactive ray; and (c) an polymer, which increases the solv. towards an alkali developer at the presence of an acid, having repeating unit -(C(R1)(R2)-C(R3)(R4-(G)f))a-, -(C(R5)(R6)-C(R7)(R8-(Q)g))b- (R1-3,5-7,9-11 = H, halo, alkyl, etc.); R4,9 =single bond, 2-5 valent specific aryl, amide group) and -(C(R9)(R10)-C(R11)(R12))c- and acid-sensitive group, and (d) a nitrogen contg. cyclic compd. and/or an aliph. amine having a carboxylic substituent. The compn. provides the high sensitivity and the high resoln. and is suitable for use in a semiconductor device prodn.

IT 289706-86-1

(pos.-working photosensitive compn.)

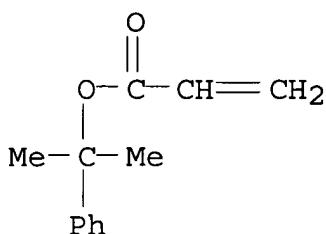
RN 289706-86-1 HCPLUS

CN 2-Propenoic acid, 1-methyl-1-phenylethyl ester, polymer with ethenylbenzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 67704-03-4

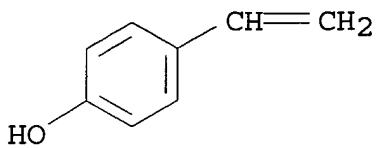
CMF C12 H14 O2



CM 2

CRN 2628-17-3

CMF C8 H8 O



CM 3

CRN 100-42-5  
CMF C8 H8 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$ 

IC ICM G03F007-075  
 ICS C08L083-06; G03F007-039; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 76  
 IT **Photoresists**  
 (pos.-working photosensitive compn. contg. silicone)  
 IT 109-12-6, 2-Aminopyrimidine 119-65-3, Isoquinoline 260-94-6,  
 Acridine 504-29-0, 2-Aminopyridine 534-85-0,  
 2-Aminodiphenylamine 580-20-1, 7-Hydroxyquinoline 607-31-8,  
 4-Methoxyquinoline 611-64-3, 9-Methylacridine 620-08-6,  
 4-Methoxypyridine 670-95-1, 4-Phenylimidazole 822-36-6,  
 4-Methylimidazole 18123-20-1, 4-Hydroxyacridine 23687-25-4,  
 4-Aminoisoquinoline 31401-45-3, 4-Dimethylaminopyrimidine  
 36631-19-3, Triphenyl imidazole 177034-67-2 287925-54-6  
 287925-56-8 288620-13-3 288620-15-5 289706-73-6 289706-75-8  
 289706-76-9 289706-79-2 289706-80-5 289706-81-6 289706-82-7  
 289706-83-8 289706-84-9 289706-85-0 **289706-86-1**  
 289706-87-2 289706-88-3 289706-90-7  
 (pos.-working photosensitive compn.)

L38 ANSWER 3 OF 6 HCPLUS COPYRIGHT 2002 ACS  
 2000:300838 Document No. 132:315856 Polymer, chemically  
 amplification resist material, and pattern  
 formation. Hatayama, Jun; Watanabe, Osamu; Takeda, Takanobu;  
 Watanabe, Atsushi; Osawa, Yoichi; Ishihara, Toshinobu (Shin-Etsu  
 Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP  
 2000128930 A2 20000509, 32 pp. (Japanese). CODEN:  
 JKXXAF. APPLICATION: JP 1998-309243 19981029.

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB An intramol. or intermol. crosslinked polymer having .gtoreq.1 repeating unit  $(CH_2CR_2)_2R_1$ , I, and II [R1 = O, N, S, (aryl-substituted) C1-20 alkylene or alkylidine, (alkyl-substituted) C6-20 arylene or arylidine, di- or tri-valent (hetero atom-contg.) group comprising the alkylene, the alkylidine, the arylidine or the arylene; R2 = H, (branched or cyclic) C1-10 alkyl; R3 = (branched or cyclic) C1-8 alkyl; m = 0-4] is claimed. The **resist** material contains the polymer, an org. solvent, and an acid generator. The pattern is formed according to the steps: (1) coating the polymer on a substrate, (2) heating and irradiating the material with a high energy ray with wavelength .ltoreq.300 nm or an electron-beam thorough a **photomask**, (3) optional heating, and (4) developing the material. The **resist** is sensitive to high energy ray, shows high sensitivity, resoln., and plasma etching resistance, and gives clear patterns.

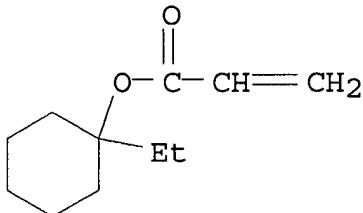
IT 266308-57-0P 266308-59-2P  
 (radiation-sensitive **resist** compn. contg. crosslinked vinyl polymer)

RN 266308-57-0 HCPLUS

CN 2-Propenoic acid, 1-ethylcyclohexyl ester, polymer with 4-ethenylphenol and 1,5-hexadiene (9CI) (CA INDEX NAME)

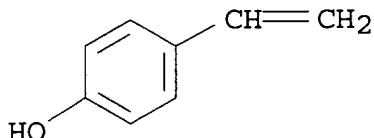
CM 1

CRN 251909-25-8  
 CMF C11 H18 O2

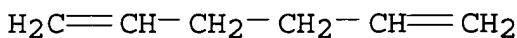


CM 2

CRN 2628-17-3  
 CMF C8 H8 O

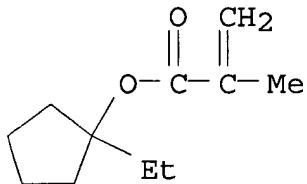


CM 3

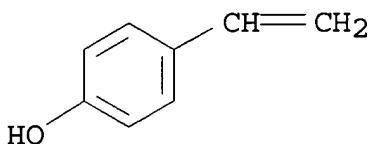
CRN 592-42-7  
CMF C6 H10

RN 266308-59-2 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-ethylcyclopentyl ester, polymer with  
 4-ethenylphenol and 1,5-hexadiene (9CI) (CA INDEX NAME)

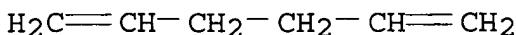
CM 1

CRN 266308-58-1  
CMF C11 H18 O2

CM 2

CRN 2628-17-3  
CMF C8 H8 O

CM 3

CRN 592-42-7  
CMF C6 H10

IC ICM C08F036-02  
 ICS C08F012-22; C08F012-34; C08F020-10; C08F020-20; C08F246-00;  
 G03F007-039

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s) : 38

ST radiation resist crosslinked vinyl polymer; acid generator chem amplification resist

IT **Resists**  
 (radiation-sensitive; radiation-sensitive **resist** compn.  
 contg. crosslinked vinyl polymer)

IT 180801-55-2 214534-44-8 258342-00-6 266308-64-9  
 (acid generator; radiation-sensitive **resist** compn.  
 contg. crosslinked vinyl polymer)

IT 157089-23-1 266308-63-8  
 (dissoln. inhibitor; radiation-sensitive **resist** compn.  
 contg. crosslinked vinyl polymer)

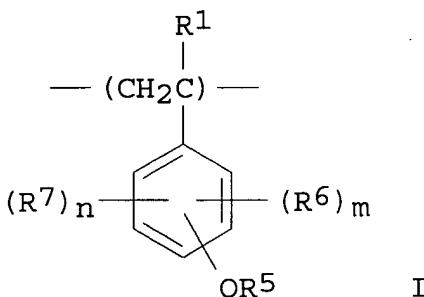
IT 102-71-6, uses 109-73-9, Butylamine, uses 211919-60-7  
 (radiation-sensitive **resist** compn. contg. crosslinked vinyl polymer)

IT 266308-54-7P 266308-56-9P **266308-57-0P**  
**266308-59-2P** 266308-61-6P 266308-62-7P  
 (radiation-sensitive **resist** compn. contg. crosslinked vinyl polymer)

L38 ANSWER 4 OF 6 HCPLUS COPYRIGHT 2002 ACS  
 1999:658546 Document No. 131:293308 Positively working  
**photoresist** composition containing acid-generating compound.  
 Aogo, Toshiaki; Mizutani, Kazuyoshi; Tan, Shiro (Fuji Photo Film Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 11282163 A2  
 19991015 Heisei, 53 pp. (Japanese). CODEN: JKXXAF.

APPLICATION: JP 1998-79458 19980326.

GI



AB The material contains a compd. generating acid under exposure to active lights or radioactive rays and a resin with repeating units I and  $[CH_2C(R_1)CO_2CR_2R_3R_4]$  [ $R_1 = H, Me$ ;  $R_2, R_3 = H$ , (substituted)]

alkyl, (substituted) aryl; R4 = cycloalkyl, alkenyl, alkynyl, aralkyl, aryl, where they may be substituted; R5 = H, CR8R9R10, CR11R12OR13; R8-12 = H, (substituted) alkyl, (substituted) cycloalkyl, (substituted) alkenyl, (substituted) alkynyl, (substituted) aryl; R13 = alkyl, cycloalkyl, aryl; R6, R7 = halo, OH, (substituted) alkyl, (substituted) aryl, (substituted) aralkyl, (substituted) alkoxy, (substituted) acyl, (substituted) acyloxy; two of each R2-4, R8-10, and R11-13 may form a ring; m, n = 0-3]. The material shows high sensitivity and improved resolving power and improved pattern profile because of no change of pattern shapes and sensitivity under exposure.

IT 246157-34-6 246157-36-8 246157-38-0  
246157-40-4 246157-41-5 246157-43-7  
246157-45-9 246157-46-0

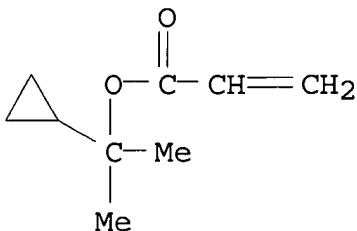
(pos.-working **photoresist** contg. acrylic hydroxystyrene polymer and acid-generating agent with improved resolving power and pattern profile)

RN 246157-34-6 HCAPLUS

CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with 1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA INDEX NAME)

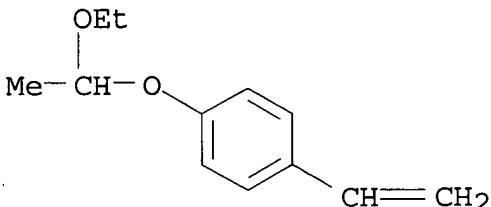
CM 1

CRN 246157-33-5  
CMF C9 H14 O2

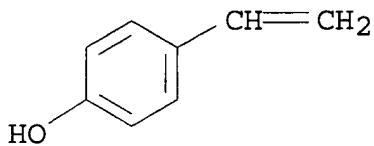


CM 2

CRN 157057-20-0  
CMF C12 H16 O2

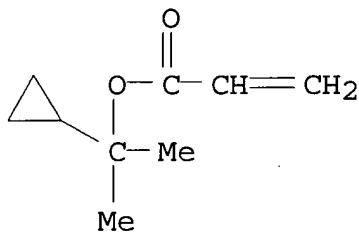


CM 3

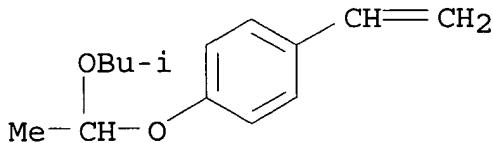
CRN 2628-17-3  
CMF C8 H8 O

RN 246157-36-8 HCPLUS  
 CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with  
 1-ethenyl-4-[1-(2-methylpropoxy)ethoxy]benzene and 4-ethenylphenol  
 (9CI) (CA INDEX NAME)

CM 1

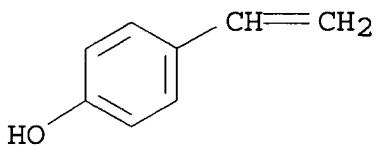
CRN 246157-33-5  
CMF C9 H14 O2

CM 2

CRN 192314-53-7  
CMF C14 H20 O2

CM 3

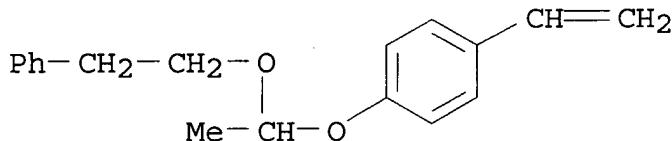
CRN 2628-17-3  
 CMF C8 H8 O



RN 246157-38-0 HCAPLUS  
 CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with 4-ethenylphenol and 1-ethenyl-4-[1-(2-phenylethoxy)ethoxy]benzene (9CI) (CA INDEX NAME)

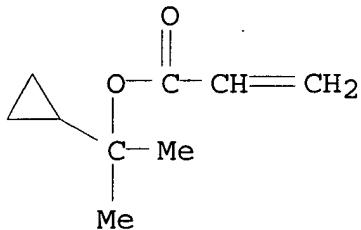
CM 1

CRN 246157-37-9  
 CMF C18 H20 O2



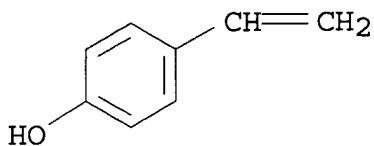
CM 2

CRN 246157-33-5  
 CMF C9 H14 O2



CM 3

CRN 2628-17-3  
 CMF C8 H8 O



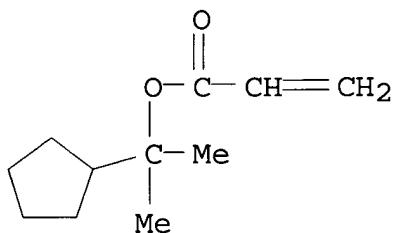
RN 246157-40-4 HCPLUS

CN 2-Propenoic acid, 1-cyclopentyl-1-methylethyl ester, polymer with  
1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA  
INDEX NAME)

CM 1

CRN 246157-39-1

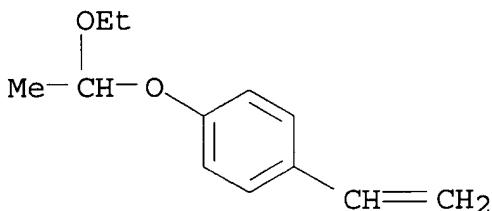
CMF C11 H18 O2



CM 2

CRN 157057-20-0

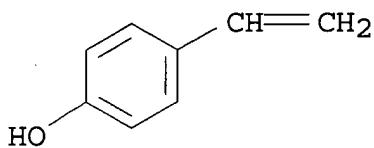
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



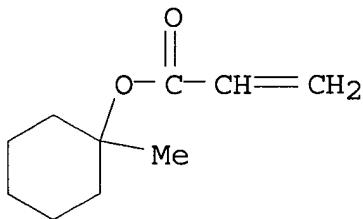
RN 246157-41-5 HCPLUS

CN 2-Propenoic acid, 1-methylcyclohexyl ester, polymer with  
1-ethenyl-4-(1-ethoxyethoxy)benzene and 4-ethenylphenol (9CI) (CA  
INDEX NAME)

CM 1

CRN 178889-47-9

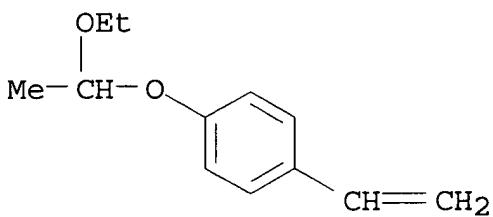
CMF C10 H16 O2



CM 2

CRN 157057-20-0

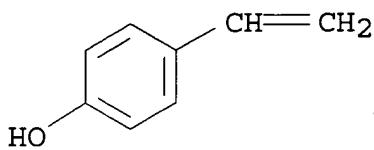
CMF C12 H16 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O

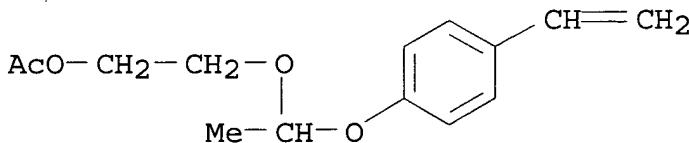


RN 246157-43-7 HCPLUS

CN 2-Propenoic acid, 1,1-dimethyl-2-propenyl ester, polymer with  
4-ethenylphenol and 2-[1-(4-ethenylphenoxy)ethoxy]ethyl acetate  
(9CI) (CA INDEX NAME)

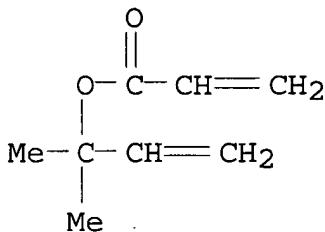
CM 1

CRN 246157-42-6

CMF C<sub>14</sub> H<sub>18</sub> O<sub>4</sub>

CM 2

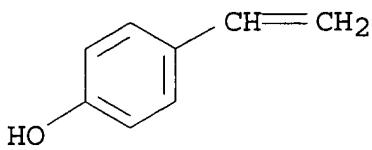
CRN 120880-88-8

CMF C<sub>8</sub> H<sub>12</sub> O<sub>2</sub>

CM 3

CRN 2628-17-3

CMF C<sub>8</sub> H<sub>8</sub> O



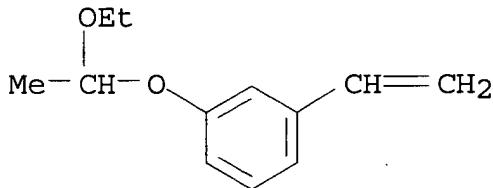
RN 246157-45-9 HCPLUS

CN 2-Propenoic acid, 1-cyclopropyl-1-methylethyl ester, polymer with  
1-ethenyl-3-(1-ethoxyethoxy)benzene and 3-ethenylphenol (9CI) (CA  
INDEX NAME)

CM 1

CRN 246157-44-8

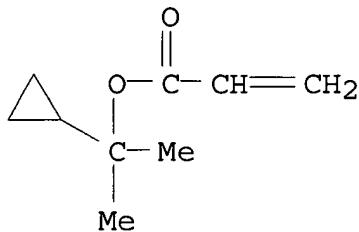
CMF C<sub>12</sub> H<sub>16</sub> O<sub>2</sub>



CM 2

CRN 246157-33-5

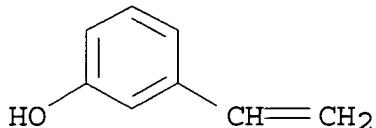
CMF C<sub>9</sub> H<sub>14</sub> O<sub>2</sub>



CM 3

CRN 620-18-8

CMF C<sub>8</sub> H<sub>8</sub> O



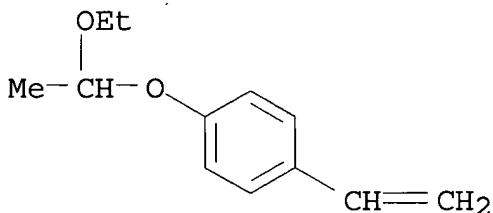
RN 246157-46-0 HCPLUS

CN 2-Propenoic acid, 1,1-dimethyl-2-propenyl ester, polymer with  
ethenylbenzene, 1-ethenyl-4-(1-ethoxyethoxy)benzene and  
4-ethenylphenol (9CI) (CA INDEX NAME)

CM 1

CRN 157057-20-0

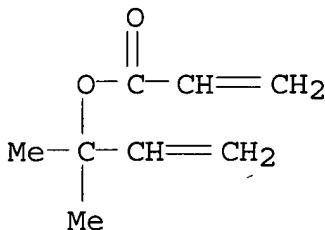
CMF C12 H16 O2



CM 2

CRN 120880-88-8

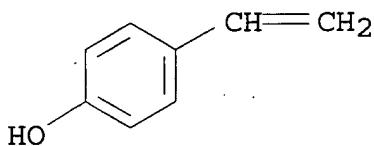
CMF C8 H12 O2



CM 3

CRN 2628-17-3

CMF C8 H8 O



CM 4

CRN 100-42-5  
CMF C8 H8 $\text{H}_2\text{C}=\text{CH}-\text{Ph}$ 

IC ICM G03F007-039  
   ICS C08F220-18; C08K005-00; C08L025-18; C08L031-02; C08L101-00;  
   H01L021-027; C08F212-14

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
   Section cross-reference(s): 38

ST pos working **photoresist** acrylic hydroxystyrene polymer;  
   acid generating agent pos working **photoresist**; resolving  
   power pattern profile **photoresist**

IT Positive **photoresists**  
   (pos.-working **photoresist** contg. acrylic hydroxystyrene  
   polymer and acid-generating agent with improved resolving power  
   and pattern profile)

IT 144317-44-2 194999-85-4 197447-16-8 207464-07-1 240424-20-8  
   240424-21-9  
   (acid-generating agent; pos.-working **photoresist** contg.  
   acrylic hydroxystyrene polymer and acid-generating agent with  
   improved resolving power and pattern profile)

IT 115-18-4  
   (monomer from; pos.-working **photoresist** contg. acrylic  
   hydroxystyrene polymer from)

IT 120880-88-8P  
   (monomer; pos.-working **photoresist** contg. acrylic  
   hydroxystyrene polymer from)

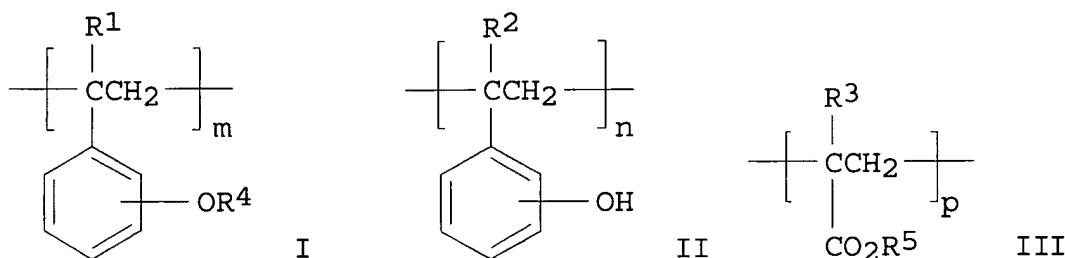
IT 109-92-2DP, Ethyl vinyl ether, reaction product with hydrolyzed  
   acetoxystyrene polymer 246157-32-4DP, hydrolyzed, reaction product  
   with Et vinyl ether  
   (pos.-working **photoresist** contg. acrylic hydroxystyrene  
   polymer and acid-generating agent with improved resolving power  
   and pattern profile)

IT 246157-34-6 246157-36-8 246157-38-0  
   246157-40-4 246157-41-5 246157-43-7  
   246157-45-9 246157-46-0  
   (pos.-working **photoresist** contg. acrylic hydroxystyrene

polymer and acid-generating agent with improved resolving power and pattern profile)

L38 ANSWER 5 OF 6 HCPLUS COPYRIGHT 2002 ACS  
 1996:449241 Document No. 125:127787 Radiation-sensitive **resist** composition using novel copolymer. Matsuno, Shugo; Abe, Nobunori; Sugimoto, Tatsuya (Nippon Zeon Co, Japan). Jpn. Kokai Tokkyo Koho JP 08101508 A2 19960416 Heisei, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1994-261053 19940930.

GI



AB The title **resist** compn. contains a radiation-sensitive component which generates an acid by irradn. with activated radiation and a polymer having structural units I, II, and III [R1-3 = H, C1-4 (substituted) alkyl, halo, cyano, nitro; R4 = CO<sub>2</sub>CR<sub>6</sub>R<sub>7</sub>R<sub>8</sub> or C(R<sub>9</sub>)(R<sub>10</sub>)CO<sub>2</sub>CR<sub>11</sub>R<sub>12</sub>R<sub>13</sub> [R6-13 = H, linear, branched, or cyclic C1-8 (substituted) alkyl, (substituted) alkenyl; R6 and R7 or R11 and R12 may form a ring]; R5 = linear, branched, or cyclic C1-8 (substituted) alkyl, (substituted) alkenyl, (substituted) aryl; m + n + p = 1, 0 < m < 0.95, 0 < n < 0.95, 0.05 ≤ p ≤ 0.6, 0.1 ≤ m/(m + n) < 1]. The **resist** is useful for patterning of semiconductor devices. A **resist** comprising 4-hydroxystyrene-tert-Bu methacrylate copolymer esterified with t-Bu bromoacetate, and Ph<sub>3</sub>S<sup>+</sup>.CF<sub>3</sub>SO<sub>3</sub><sup>-</sup> showed high sensitivity and gave a submicron pos. pattern by using KrF excimer laser.

IT 179091-89-5P 179465-81-7P  
 (radiation-sensitive **resist** compn.)

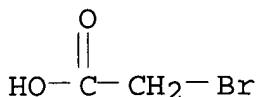
RN 179091-89-5 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-methylcyclohexyl ester, polymer with 4-ethenylphenol, bromoacetate (9CI) (CA INDEX NAME)

CM 1

CRN 79-08-3

CMF C2 H3 Br O2

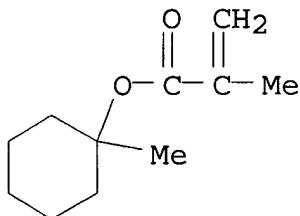


CM 2

CRN 178889-54-8  
 CMF (C11 H18 O2 . C8 H8 O)x  
 CCI PMS

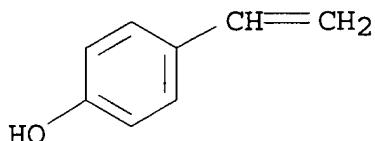
CM 3

CRN 76392-14-8  
 CMF C11 H18 O2



CM 4

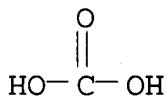
CRN 2628-17-3  
 CMF C8 H8 O



RN 179465-81-7 HCAPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-methylcyclohexyl ester, polymer with 4-ethenylphenol, carbonate (9CI) (CA INDEX NAME)

CM 1

CRN 463-79-6  
 CMF C H2 O3

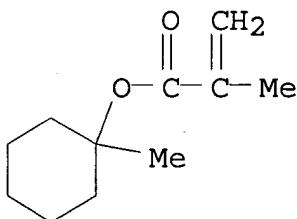


CM 2

CRN 178889-54-8  
 CMF (C<sub>11</sub> H<sub>18</sub> O<sub>2</sub> . C<sub>8</sub> H<sub>8</sub> O)x  
 CCI PMS

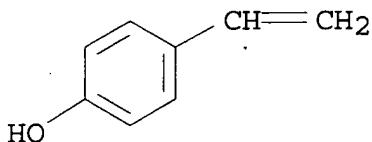
CM 3

CRN 76392-14-8  
 CMF C<sub>11</sub> H<sub>18</sub> O<sub>2</sub>



CM 4

CRN 2628-17-3  
 CMF C<sub>8</sub> H<sub>8</sub> O



IC ICM G03F007-039  
 ICS G03F007-004; H01L021-027  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 76  
 ST radiation sensitive **resist** compn; cycloalkyl acrylate polymer **resist**; styrene deriv copolymer **resist**; vinylphenol deriv copolymer **resist**; acrylate deriv copolymer **resist**; acid generating compd **resist**; semiconductor device **resist** radiation sensitive  
 IT Semiconductor devices

IT (patterning; radiation-sensitive **resist** compn. for)  
**Resists**  
 (radiation-sensitive **resist** compn.)  
 IT 66003-78-9, Triphenylsulfonium triflate  
 (acid generator; radiation-sensitive **resist** compn.)  
 IT 179091-88-4P 179091-89-5P 179465-81-7P  
 (radiation-sensitive **resist** compn.)

L38 ANSWER 6 OF 6 HCPLUS COPYRIGHT 2002 ACS  
 1996:388353 Document No. 125:45136 **Resist** composition. Abe,  
 Nobunori; Matsuno, Shugo; Tanaka, Hideyuki; Sugimoto, Tatsuya; Wada,  
 Yasumasa (Nippon Zeon Co., Ltd., Japan). PCT Int. Appl. WO 9612216  
 A1 19960425, 91 pp. DESIGNATED STATES: W: KR, US; RW:  
 AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE.  
 (Japanese). CODEN: PIXXD2. APPLICATION: WO 1995-JP2114 19951013.  
 PRIORITY: JP 1994-274457 19941013; JP 1995-21250 19950113; JP  
 1995-84729 19950316.

AB A **resist** compn. contains a polymer (a) having  
 acid-cleavable groups and a compd. (b) capable of yielding an acid  
 when irradiated with active rays of light, wherein the polymer (a)  
 has groups contg. an allyloxy group having at least two substituents  
 as the acid-cleavable group. Also claimed is another **resist**  
 compn. contg. a resin binder (A), a compd. (B) capable of yielding  
 an acid when irradiated with active rays of light, and a compd. (C)  
 having an acid-cleavable group, wherein the compd. (C) has a group  
 contg. an allyloxy group having at least one substituent as the  
 acid-cleavable group. These compns. are excellent in sensitivity,  
 resln., heat resistance, and pattern formation.

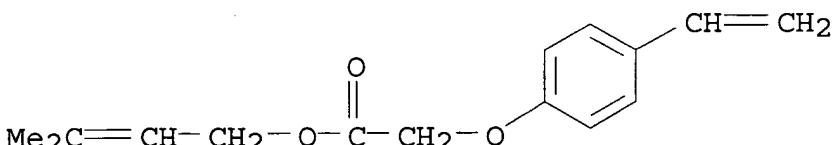
IT 178177-94-1P 178177-99-6P  
 (**resist** compn. from)

RN 178177-94-1 HCPLUS

CN 2-Propenoic acid, 2-methyl-, 1-methylcyclohexyl ester, polymer with  
 4-ethenylphenol and 3-methyl-2-butenyl (4-ethenylphenoxy)acetate  
 (9CI) (CA INDEX NAME)

CM 1

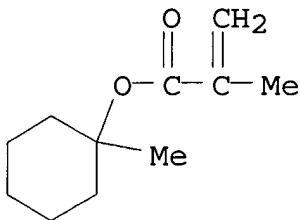
CRN 178177-90-7  
 CMF C15 H18 O3



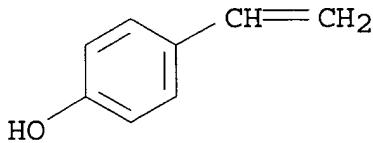
CM 2

CRN 76392-14-8

CMF C11 H18 O2

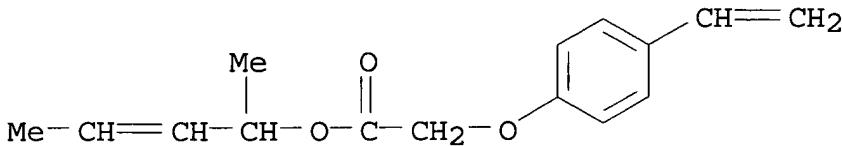


CM 3

CRN 2628-17-3  
CMF C8 H8 O

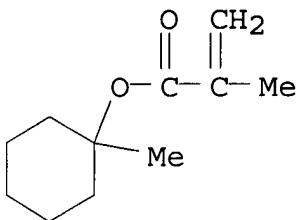
RN 178177-99-6 HCPLUS  
 CN 2-Propenoic acid, 2-methyl-, 1-methylcyclohexyl ester, polymer with  
 4-ethenylphenol and 1-methyl-2-but enyl (4-ethenylphenoxy)acetate  
 (9CI) (CA INDEX NAME)

CM 1

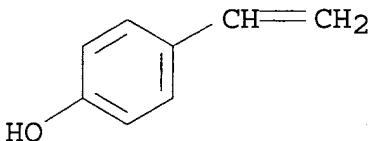
CRN 178177-95-2  
CMF C15 H18 O3

CM 2

CRN 76392-14-8  
CMF C11 H18 O2



CM 3

CRN 2628-17-3  
CMF C<sub>8</sub> H<sub>8</sub> O

IC ICM G03F007-039  
 ICS G03F007-004  
 CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and  
 Other Reprographic Processes)  
 ST resist compn acid cleavable polymer  
 IT Resist  
     (photo-, acid-cleavable polymer contg.)  
 IT 106-95-6DP, Allyl bromide, reaction product with hydrogenated  
 polyvinylphenol 870-63-3DP, 1-Bromo-3-methyl-2-butene, reaction  
 product with hydrogenated polyvinylphenol 59269-51-1DP,  
 Polyvinylphenol, reaction product with allyloxy group-contg. compd.  
 66928-69-6DP, reaction product with hydrogenated polyvinylphenol  
 71215-43-5DP, 3-Methyl-2-butenyl bromoacetate, reaction product with  
 hydrogenated polyvinylphenol 103723-94-0DP, reaction product with  
 hydrogenated polyvinylphenol 178177-68-9P 178177-69-0P  
 178177-70-3P 178177-71-4P 178177-72-5P 178177-73-6P  
 178177-74-7P 178177-75-8P 178177-76-9P 178177-77-0P  
 178177-78-1P 178177-79-2P 178177-80-5P 178177-81-6P  
 178177-82-7DP, reaction product with hydrogenated polyvinylphenol  
 178177-83-8DP, reaction product with hydrogenated polyvinylphenol  
 178177-84-9DP, reaction product with hydrogenated polyvinylphenol  
 178177-85-0DP, reaction product with hydrogenated polyvinylphenol  
 178177-86-1DP, reaction product with hydrogenated polyvinylphenol  
 178177-87-2DP, reaction product with hydrogenated polyvinylphenol  
 178177-88-3DP, reaction product with hydrogenated polyvinylphenol  
 178177-89-4P, 4-Hydroxystyrene-3-methyl-2-butenyl methacrylate  
 copolymer 178177-91-8P 178177-92-9P 178177-93-0P  
**178177-94-1P** 178177-96-3P 178177-97-4P 178177-98-5P